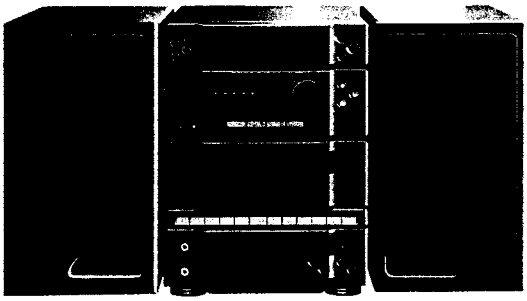
Midi System FW2010/22

Service
Service
Service



Service Manual

CONTENTS : **page**

Connections and Control and ESD Text 2
Picture 3
Specifications 4
Set Disassembly Drawing .... 5 - 6
CD Greasing Drawing 7
Tape Deck Greasing Drawing 8
CD Trouble Shooting Procedure .... 9 - 16
Wiring Diagram .... 17 - 22
Power circuit diagram .... 23 - 25
- component layout .... 26 - 27

Tuner circuit diagram .... 28 - 29
- adjustment table and drawing .... 30 - 31
- component layout .... 32 - 33

CD/Deck component layout .... 34 - 36
- Deck circuit diagram .... 37 - 38
- Deck adjustment drawing and table .... 39 - 40
- CD/Deck adjustment points .... 41 - 42
- CD adjustment table and circuit diagram .... 43 - 46
- CD/Deck track layout .... 47 - 49

Sub circuit diagram .... 50 - 53
- component layout .... 54 - 55

System circuit diagram .... 56 - 58
- component layout .... 59 - 60

Amplifier circuit diagram .... 61 - 62
- component layout .... 63 - 64

Deck Exploded View .... 65 - 67
CD Exploded View 68
CD and Deck Mechanical partslist 69
Set Exploded View and Mechanical partslist .... 70 - 73
Electrical Partslist .... 74 - 77
Handling chip component and Safety text 78

"Pour votre sécurité, ces documents
doivent être utilisés par des spécia-
listes agréés, seuls habilités à réparer
votre appareil en panne".

CLASS 1
LASER PRODUCT
3122 110 03420

Published by Consumer Electronics Printed in The Netherlands © Copyright reserved Subject to modification

4822 725 24286

PHILIPS

CONNECTIONS AND CONTROLS

1	Power Switch	S815
2	Infra Red Sensor	IR800
3	Graphic Equalizer	VR651 - VR655
		VR651' - VR655'
4	Timer Control	S813, S814
		S816, S817
5	Display	FL800
6	Mono/Stereo Switch	S810
	Tuning Up/Down	S811, S812
7	Volume Control/Indicator	VR600/LD600
8	Not Applicable	
9	Balance Control	VR802
10	Function Selector	S802 - S805
11	Deck 2 Play/Record	
12	Deck 2 Control	
13	CD Control	S818 - S824
14	CD Tray	
15	Headphone	J101
16	Not applicable	
17	Deck 1 Control	
18	Deck 1 Playback	
19	DBB Control	VR800
20	Dolby NR On/Off	S800
21	Not Applicable	

A	AM Loop Antenna Socket	341
B	FM Antenna Socket	341
C	Loop Antenna Holder	219
D	AC Mains Cord	
E	Not Applicable	
F	Auxiliary Socket	J100
G	Speaker Socket	SP550

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD

D WARNUNG

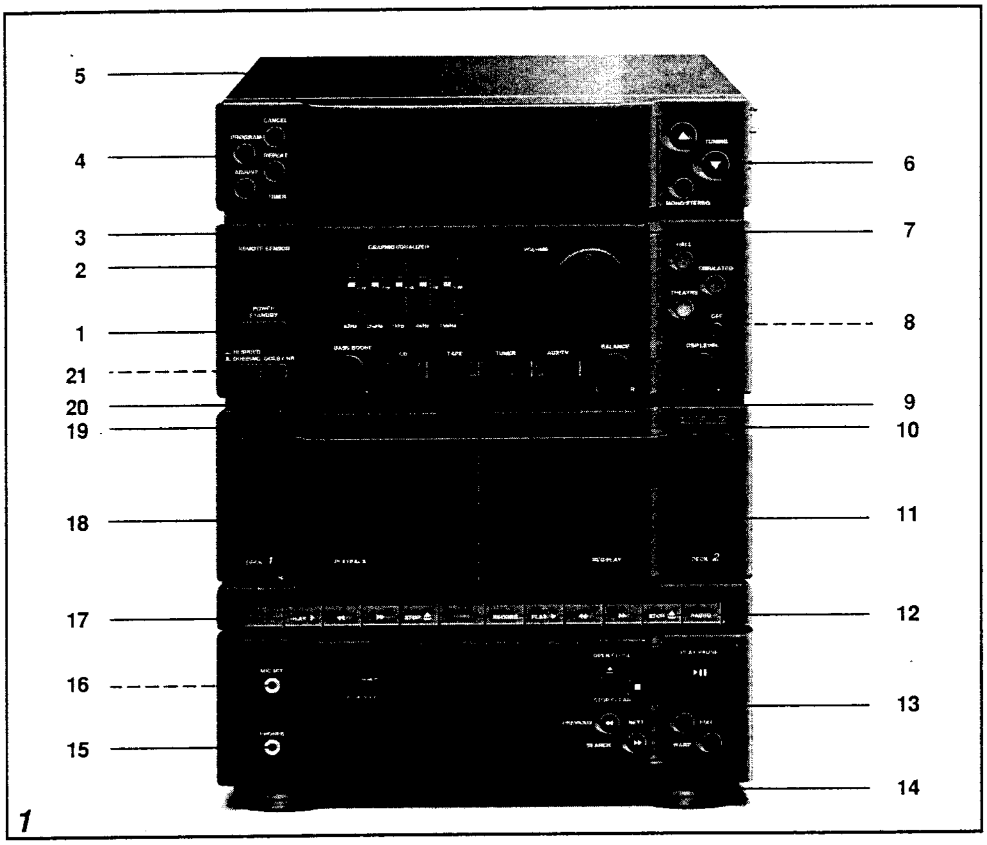
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

NL WAARSCHUWING

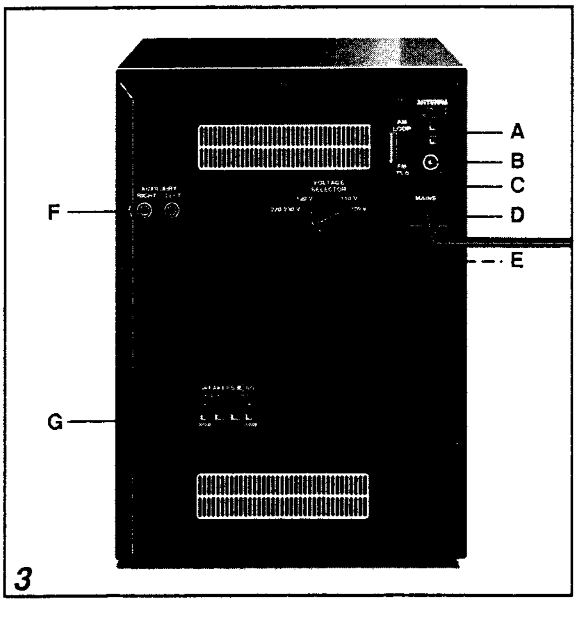
Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.


5
4
3
2
1
21
20
19
18
17
16
15
6
7
8
9
10
11
12
13
14

1



3

SPECIFICATIONS

GENERAL

Mains voltage	220V
Mains frequency	50Hz
Power consumption	85W max.
Dimension centre unit	225 x 302 x 260mm

TUNER : FM SECTION

Tuning range	87.5MHz - 108MHz
IF frequency	10.7MHz
Aerial input	75Ω coaxial
Sensitivity at 26dB S/N	< 4.467μV
Selectivity at 600kHz bandwidth	> 40dB
IF rejection	> 60dB
Image rejection	> 40dB

TUNER : AM SECTION

Tuning range	MW	531kHz - 1602kHz
	LW	146kHz - 290kHz
IF frequency		450kHz
Sensitivity at 26dB S/N	MW	< 4000μV/M
	LW	< 8.9mV/M
Selectivity at 20kHz bandwidth	MW	> 24dB
	LW	> 28dB
IF rejection	MW	> 56dB
	LW	> 45dB
Image rejection	MW	> 30dB
	LW	> 28dB

AMPLIFIER

Output power at 10% distortion		2 x 15W -1dB
Speaker impedance		2 x 6Ω
Frequency response within -3dB		40Hz - 20kHz
Equalizer control		-3dB to +3dB
Dynamic bass boost		±3dB at 100Hz
Headphone output at 8Ω		25mV
Input sensitivity	Aux	300mV

CASSETTE RECORDER

Number of track		2 x 2 stereo
Tape speed		4.76 cm/sec ± 2% 2 x 4.76 cm/sec
Wow and flutter		< 0.4%
Recording playback frequency response within ±6dB		80Hz - 10kHz (Normal)
		80 - 11kHz (Chrome)
Signal to noise ratio	Dolby off	> 40dB (Normal)
		> 42dB (Chrome)
	Dolby on	> 51dB (Normal)
		> 53dB (Chrome)

COMPACT DISC

Frequency response within +2dB/-4dB	20Hz - 20kHz
Signal/Hiss ratio	> 85dB
Distortion at 1kHz	< 0.3%
Channel seperation at 1kHz	> 60dB

SET DISASSEMBLY DRAWING

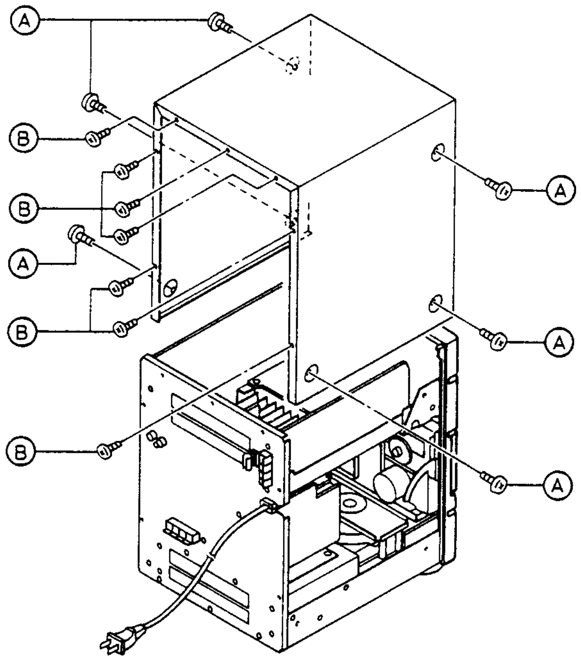


Figure 1

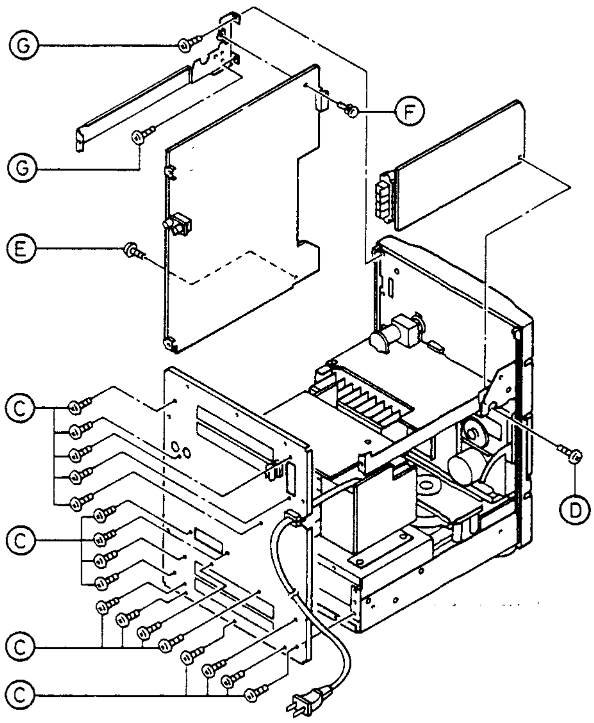


Figure 2

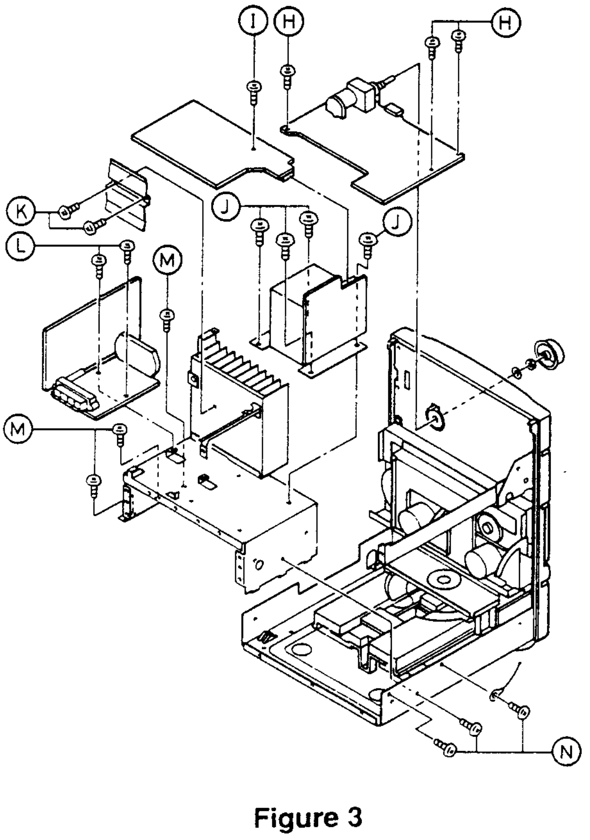

I
H
H
K
L
M
J
J
M
N

Figure 3

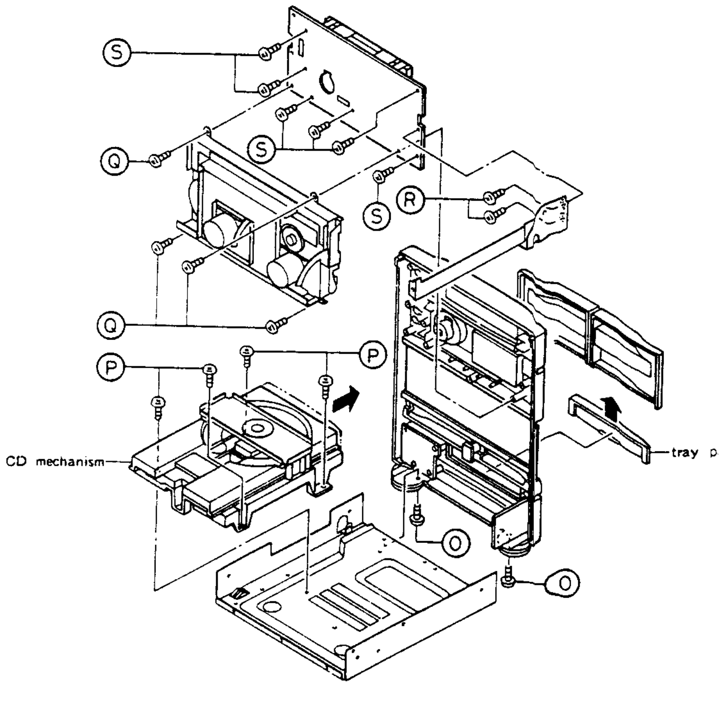

S
Q
S
S
R
Q
P
P
CD mechanism
tray p
O
O

Figure 4

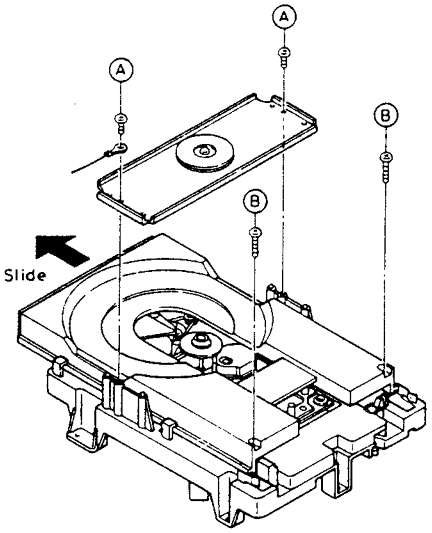


Figure 5

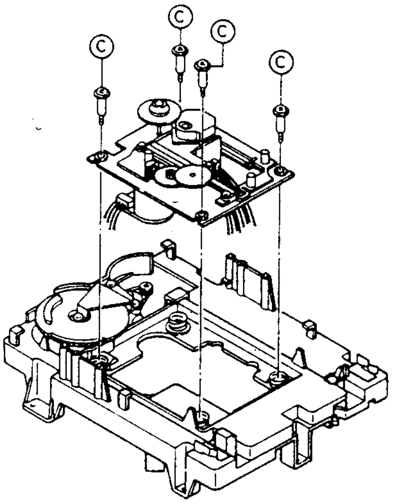


Figure 6

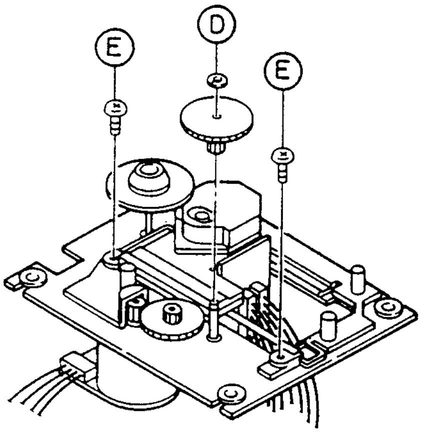


Figure 7

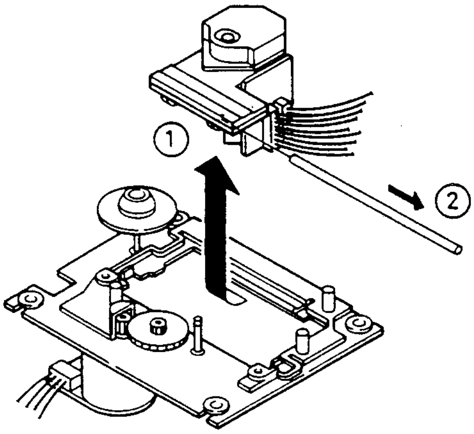


Figure 8

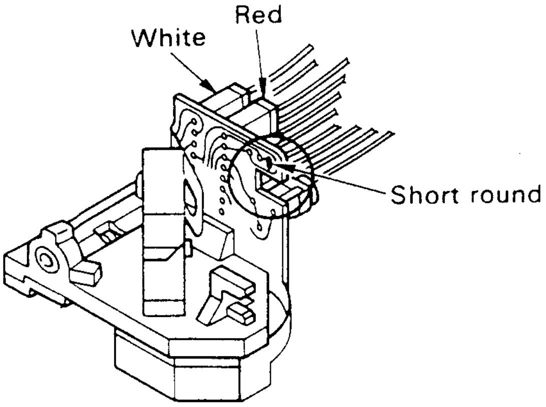
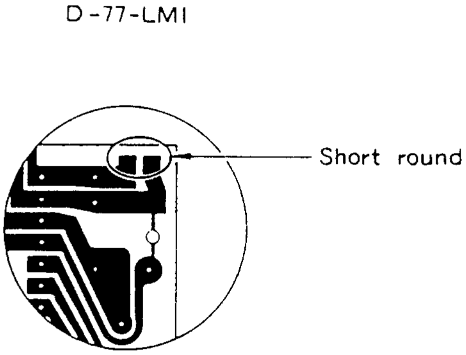

Red
White
Short round

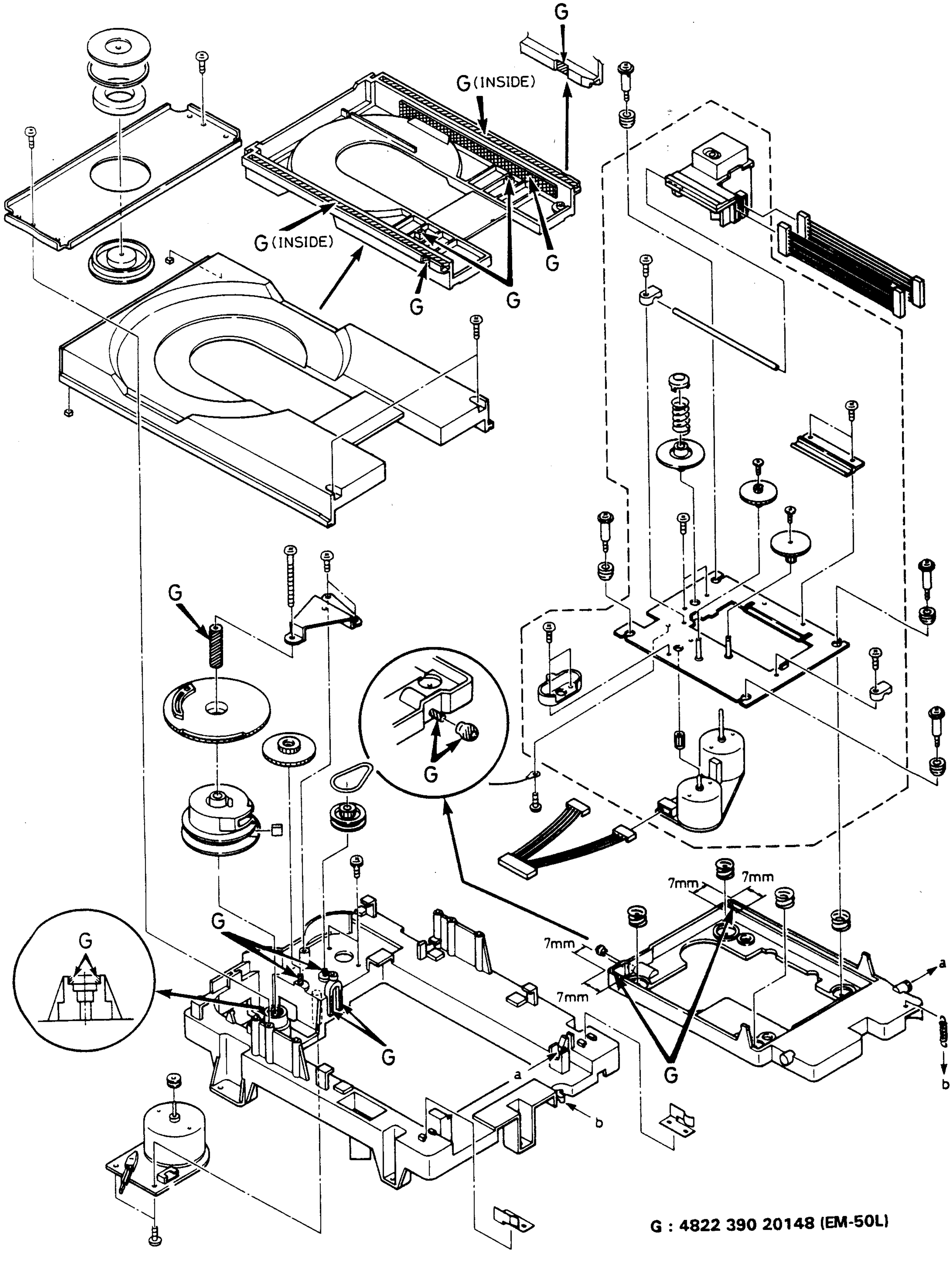
Figure 9


D -77-LMI
Short round

Desolder and remove the shorting tab after connector is assembled.

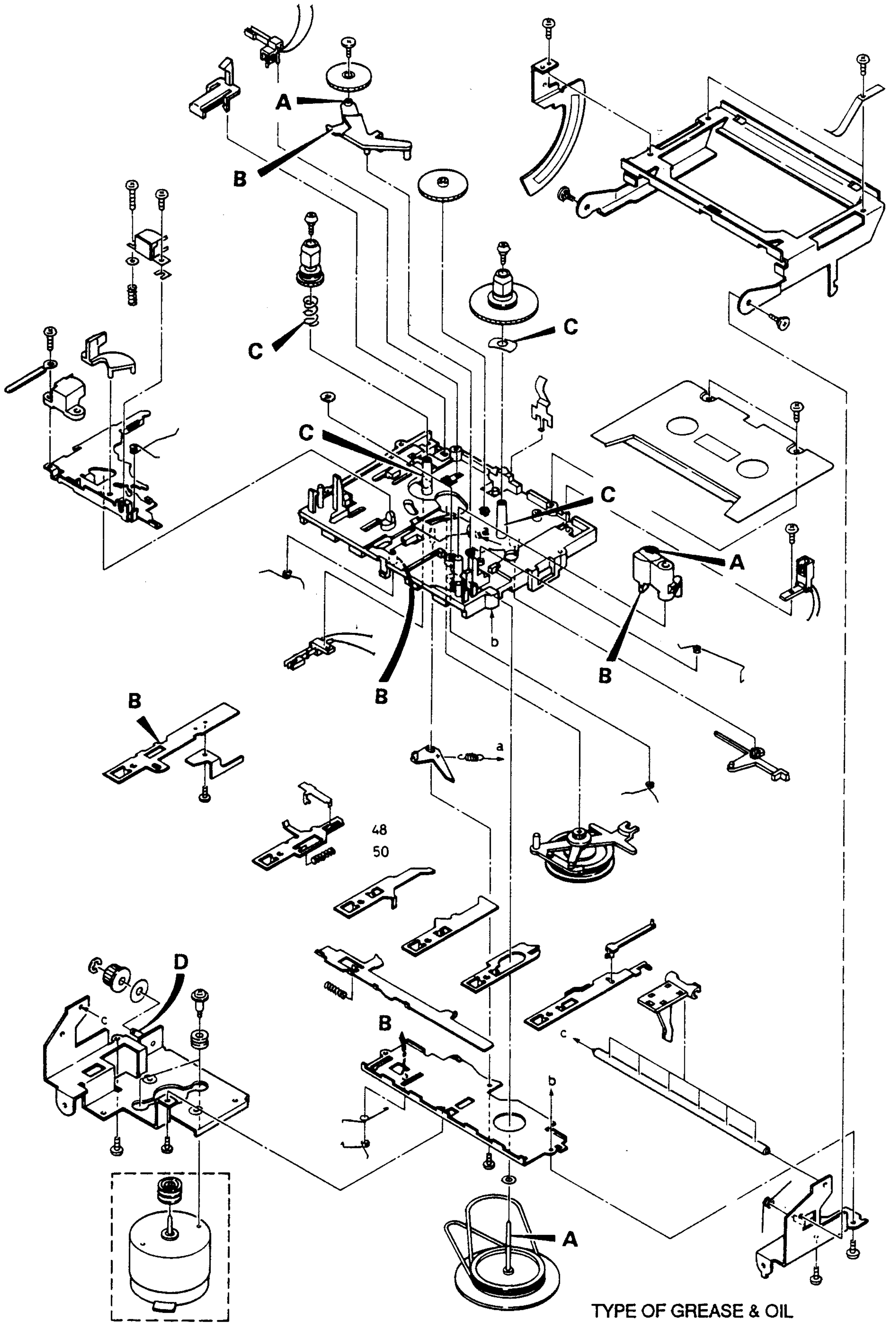
Figure 10

CD Greasing Drawing


G
G (INSIDE)
G (INSIDE)
G
G
G
G
G
G
G
G
7mm
7mm
7mm
7mm
a
b
a
b
G

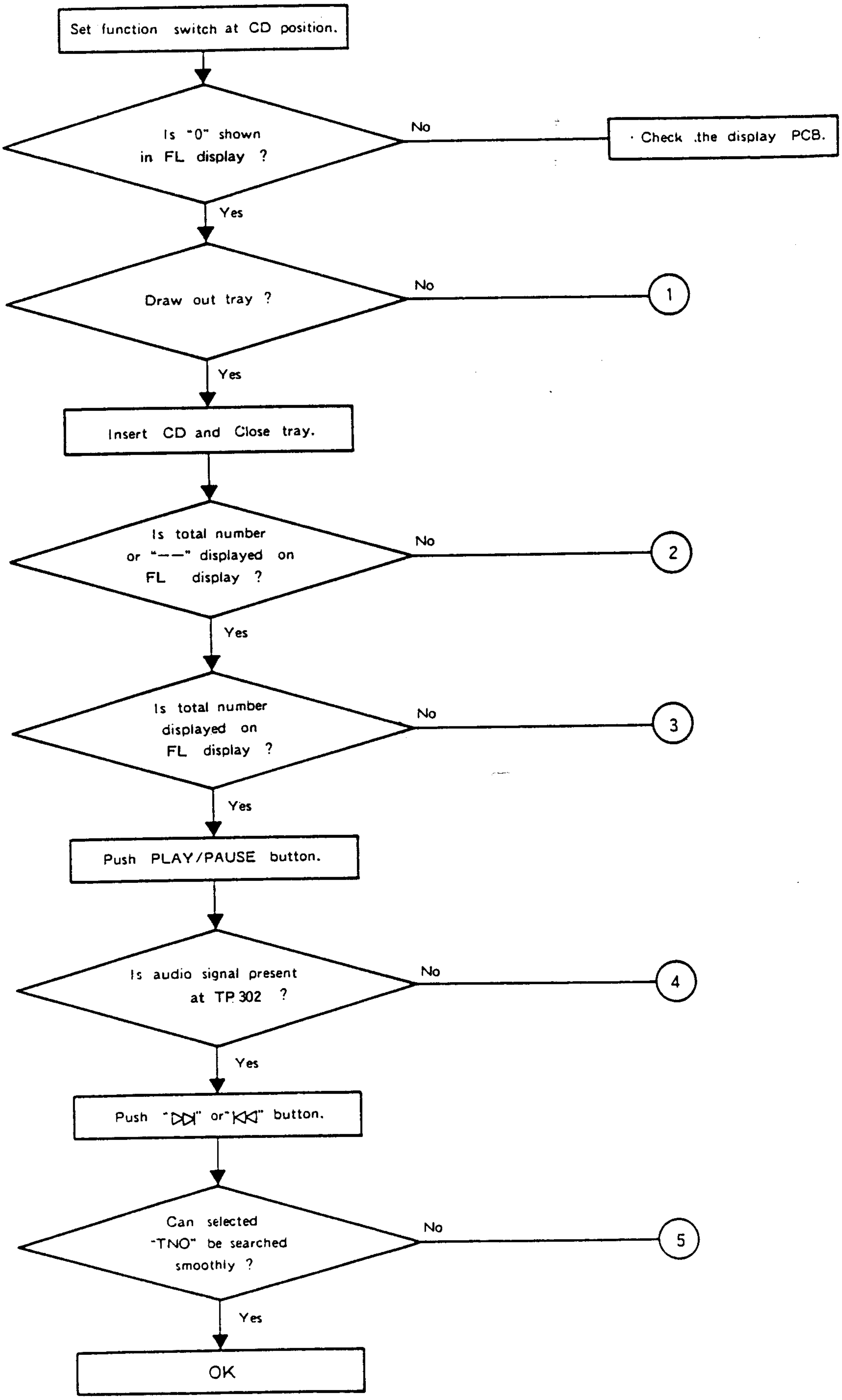
G : 4822 390 20148 (EM-50L)

Tape Deck Greasing Drawing

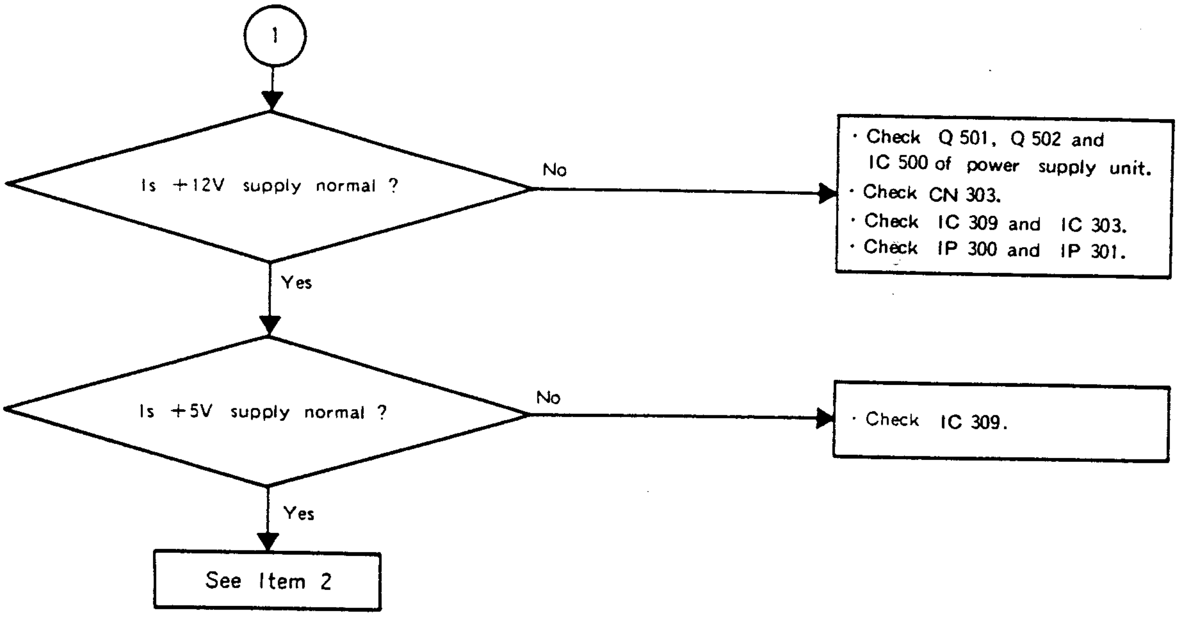

A
B
C
C
C
C
A
B
B
b
B
a
48
50
D
B
c
c
b
A

TYPE OF GREASE & OIL
A : 5322 390 10096 OIL 948P
B : 4822 390 20139 EM30L
C : 4822 390 20004 G3115
D : 4822 390 20004 G332

TROUBLESHOOTING CHART, CD


Set function switch at CD position.
Is "0" shown in FL display ?
No
· Check the display PCB.
Yes
Draw out tray ?
No
1
Yes
Insert CD and Close tray.
Is total number or "——" displayed on FL display ?
No
2
Yes
Is total number displayed on FL display ?
No
3
Yes
Push PLAY/PAUSE button.
Is audio signal present at TP 302 ?
No
4
Yes
Push "▷▷|" or "|◁◁" button.
Can selected "TNO" be searched smoothly ?
No
5
Yes
OK

Item 1 When no tray draw out.


1
Is +12V supply normal ?
No
· Check Q 501, Q 502 and IC 500 of power supply unit.
· Check CN 303.
· Check IC 309 and IC 303.
· Check IP 300 and IP 301.
Yes
Is +5V supply normal ?
No
· Check IC 309.
Yes
See Item 2

Item 2 When no FL display come on.

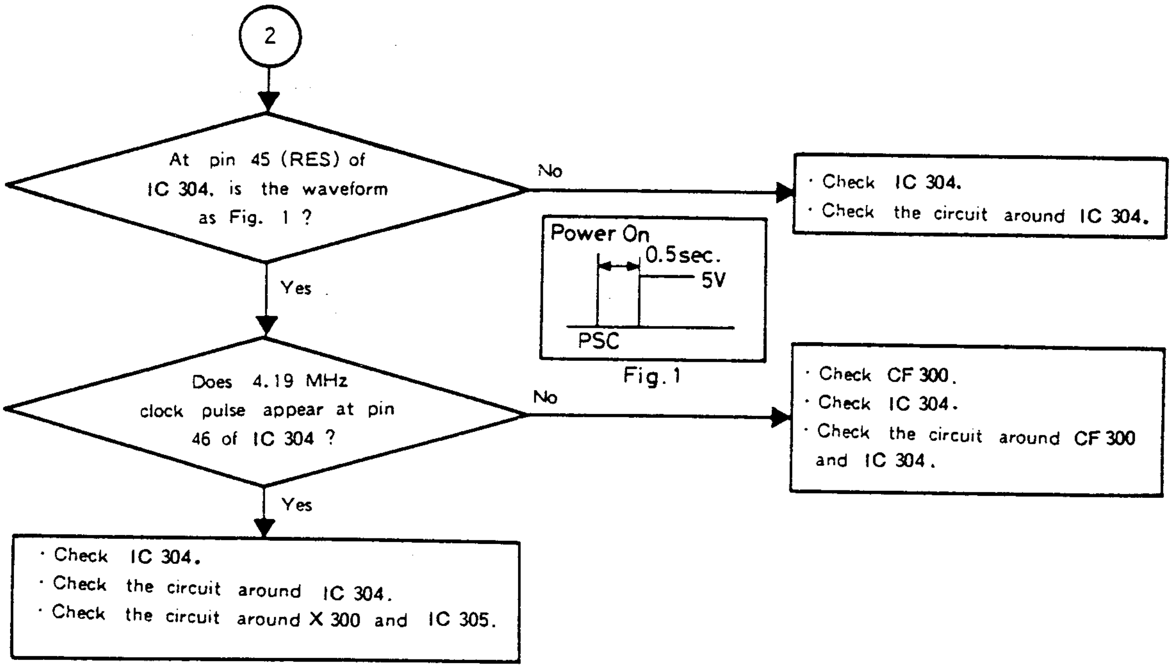
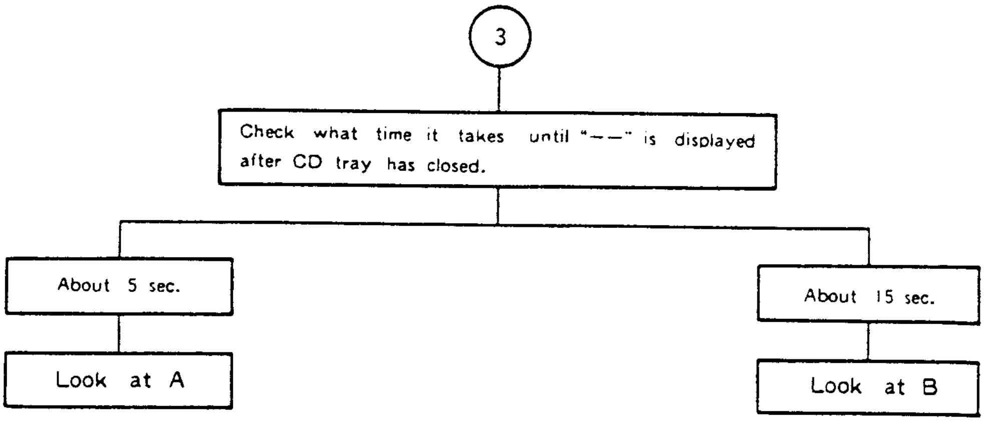
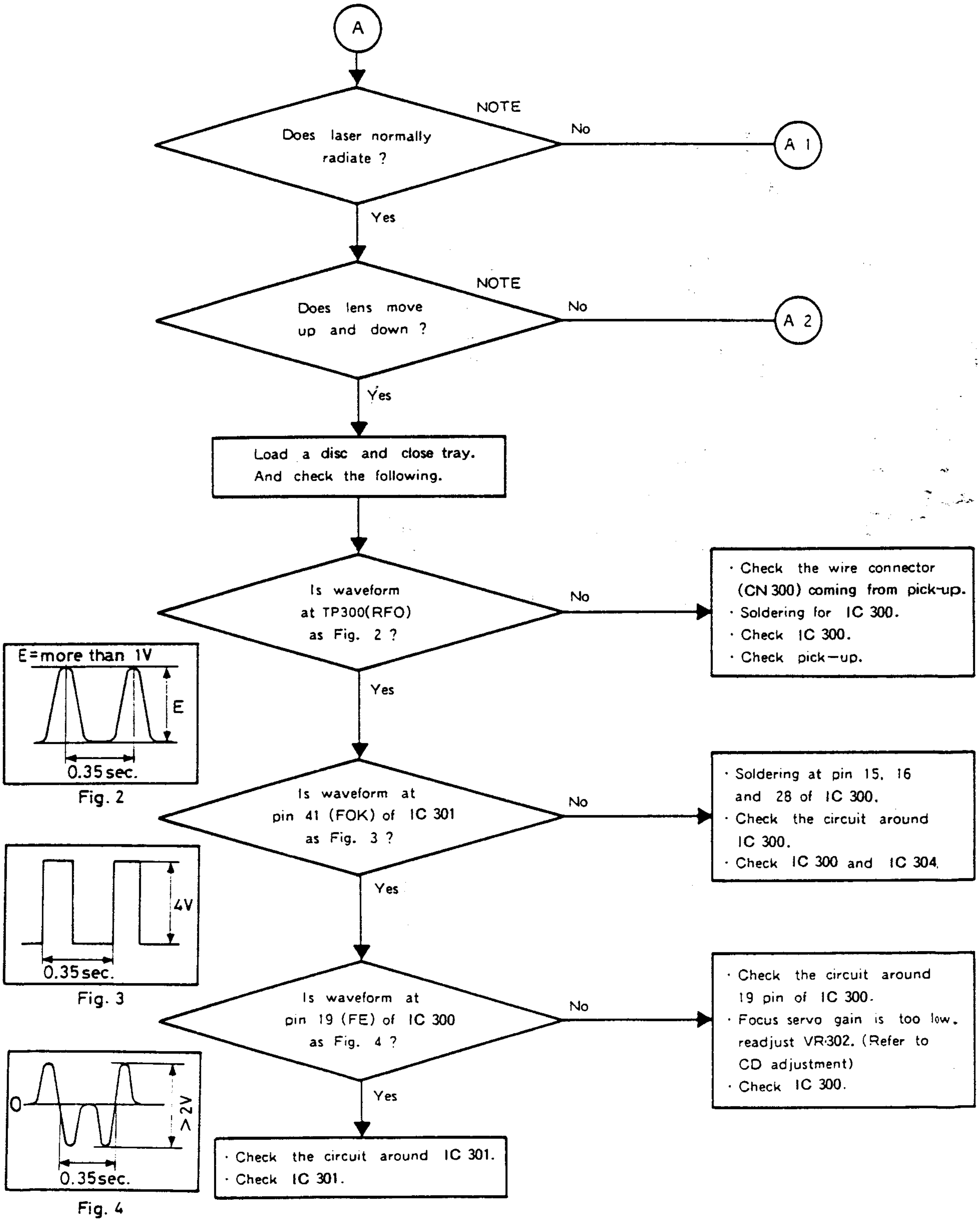

2
At pin 45 (RES) of IC 304, is the waveform as Fig. 1 ?
No
· Check IC 304.
· Check the circuit around IC 304.
Power On
0.5sec.
5V
PSC
Yes
Does 4.19 MHz clock pulse appear at pin 46 of IC 304 ?
No
· Check CF 300.
· Check IC 304.
· Check the circuit around CF 300 and IC 304.
Yes
· Check IC 304.
· Check the circuit around IC 304.
· Check the circuit around X 300 and IC 305.

Fig. 1

Item 3 When TNO. and time display are indicated "——" and "——:——".


3
Check what time it takes until "——" is displayed after CD tray has closed.
About 5 sec.
Look at A
About 15 sec.
Look at B

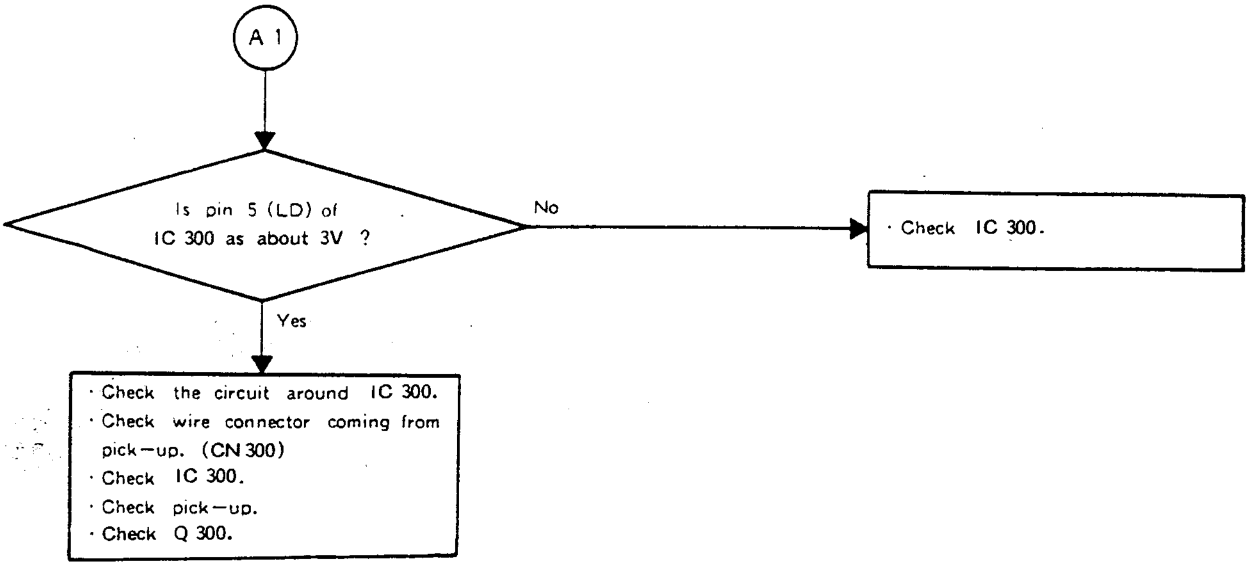
3—A


A
NOTE
Does laser normally radiate ?
No
A 1
Yes
NOTE
Does lens move up and down ?
No
A 2
Yes
Load a disc and close tray. And check the following.
Is waveform at TP300(RFO) as Fig. 2 ?
No
· Check the wire connector (CN 300) coming from pick-up.
· Soldering for IC 300.
· Check IC 300.
· Check pick—up.
Yes
E=more than 1V
E
0.35 sec.
Fig. 2
Is waveform at pin 41 (FOK) of IC 301 as Fig. 3 ?
No
· Soldering at pin 15, 16 and 28 of IC 300.
· Check the circuit around IC 300.
· Check IC 300 and IC 304.
Yes
4V
0.35 sec.
Fig. 3
Is waveform at pin 19 (FE) of IC 300 as Fig. 4 ?
No
· Check the circuit around 19 pin of IC 300.
· Focus servo gain is too low, readjust VR302. (Refer to CD adjustment)
· Check IC 300.
Yes
· Check the circuit around IC 301.
· Check IC 301.
0
>2V
0.35sec.
Fig. 4

NOTE : Close the tray and check the radiation with optical power meter.
If no optical power meter is available, check radiation of pick—up unit at a distance of more than 30 cm off the pick—up unit.

[Never attempt to check radiation at a distance of less than 30 cm off.]

3—A 1


A 1
Is pin 5 (LD) of IC 300 as about 3V ?
No
· Check IC 300.
Yes
· Check the circuit around IC 300.
· Check wire connector coming from pick—up. (CN 300)
· Check IC 300.
· Check pick—up.
· Check Q 300.

3—A 2

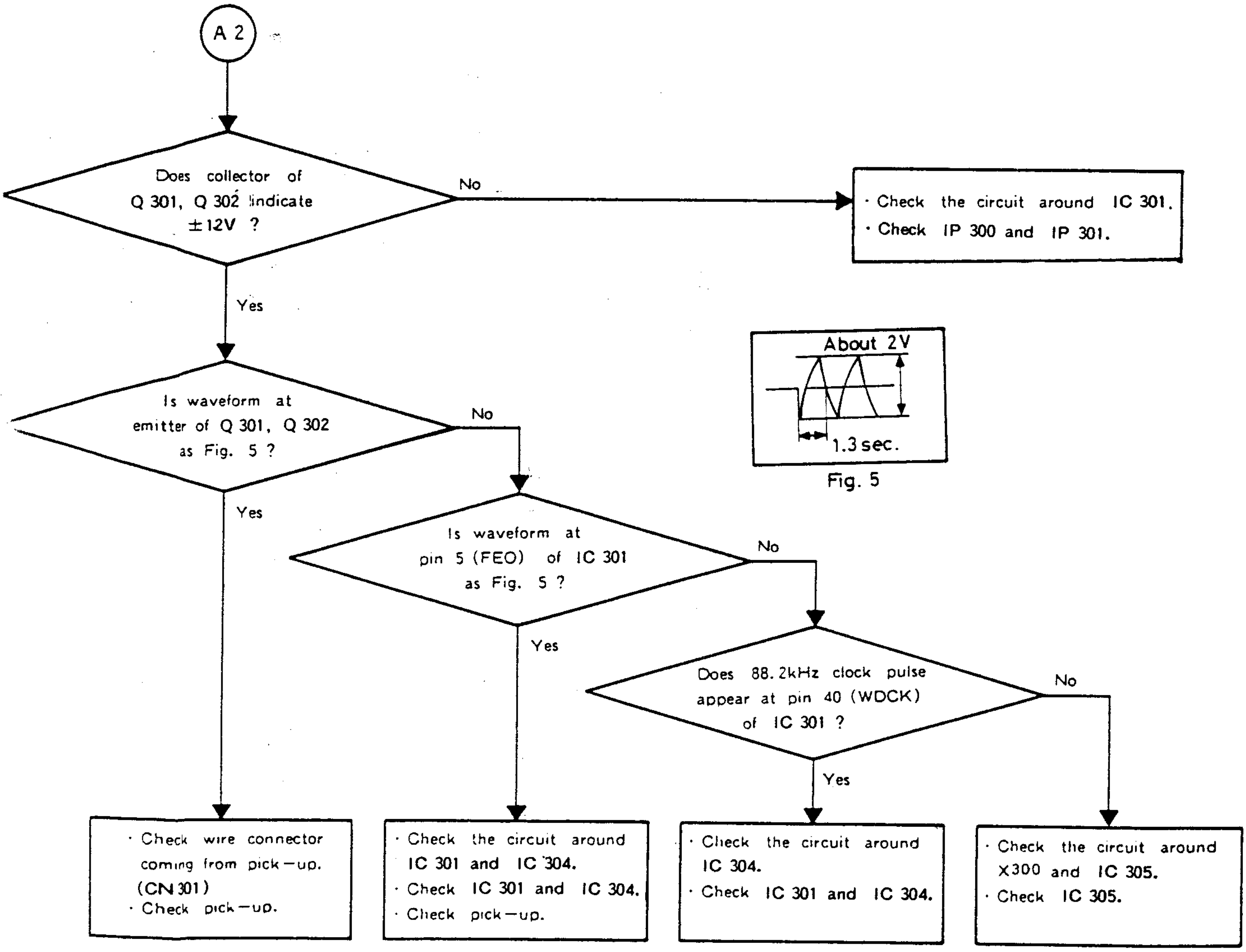

A 2
Does collector of Q 301, Q 302 indicate ±12V ?
No
· Check the circuit around IC 301.
· Check IP 300 and IP 301.
Yes
Is waveform at emitter of Q 301, Q 302 as Fig. 5 ?
No
Yes
Is waveform at pin 5 (FEO) of IC 301 as Fig. 5 ?
No
Yes
Does 88.2kHz clock pulse appear at pin 40 (WDCK) of IC 301 ?
No
Yes
About 2V
1.3 sec.
· Check wire connector coming from pick—up. (CN 301)
· Check pick—up.
· Check the circuit around IC 301 and IC 304.
· Check IC 301 and IC 304.
· Check pick—up.
· Check the circuit around IC 304.
· Check IC 301 and IC 304.
· Check the circuit around X300 and IC 305.
· Check IC 305.

Fig. 5

3–B

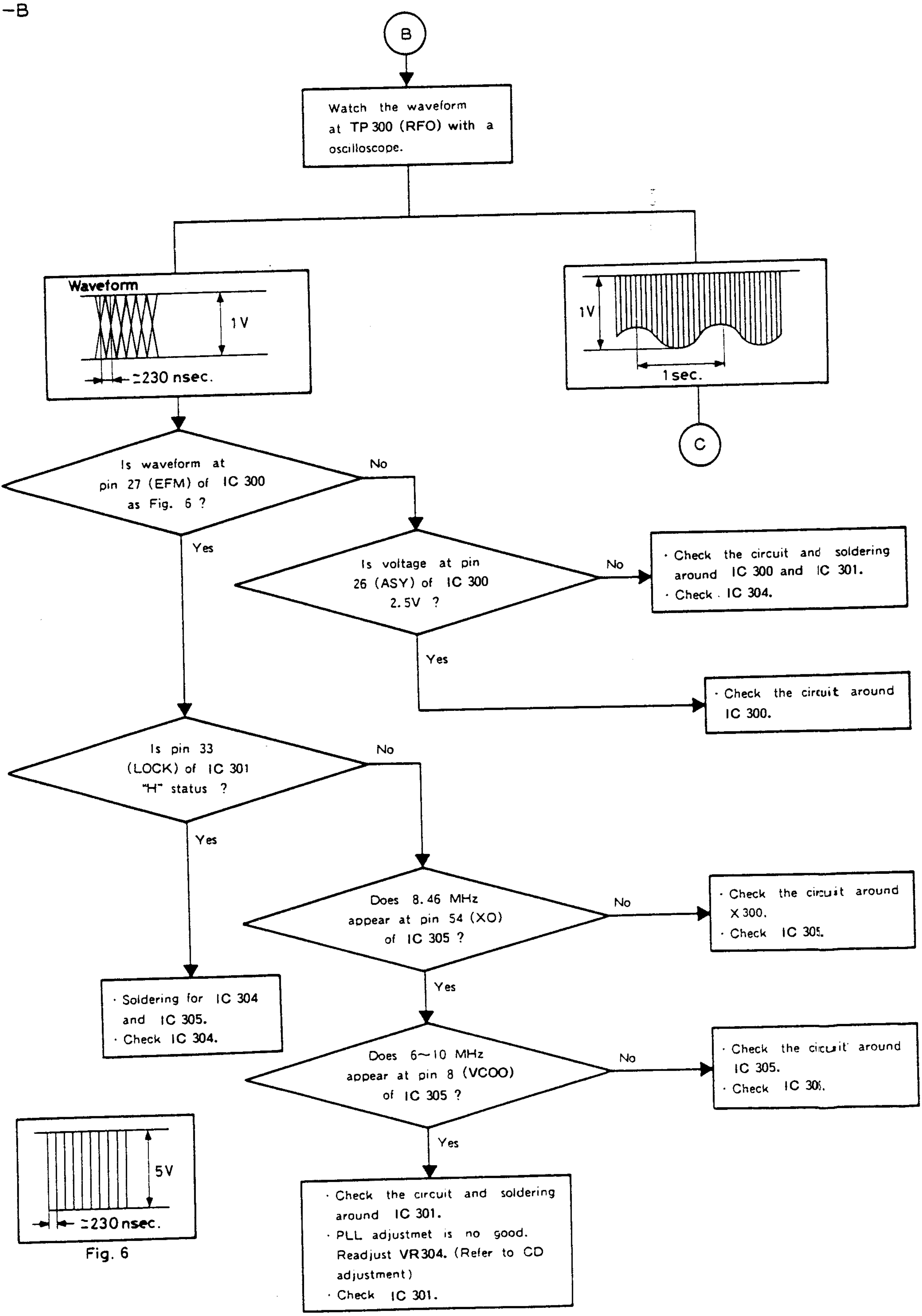
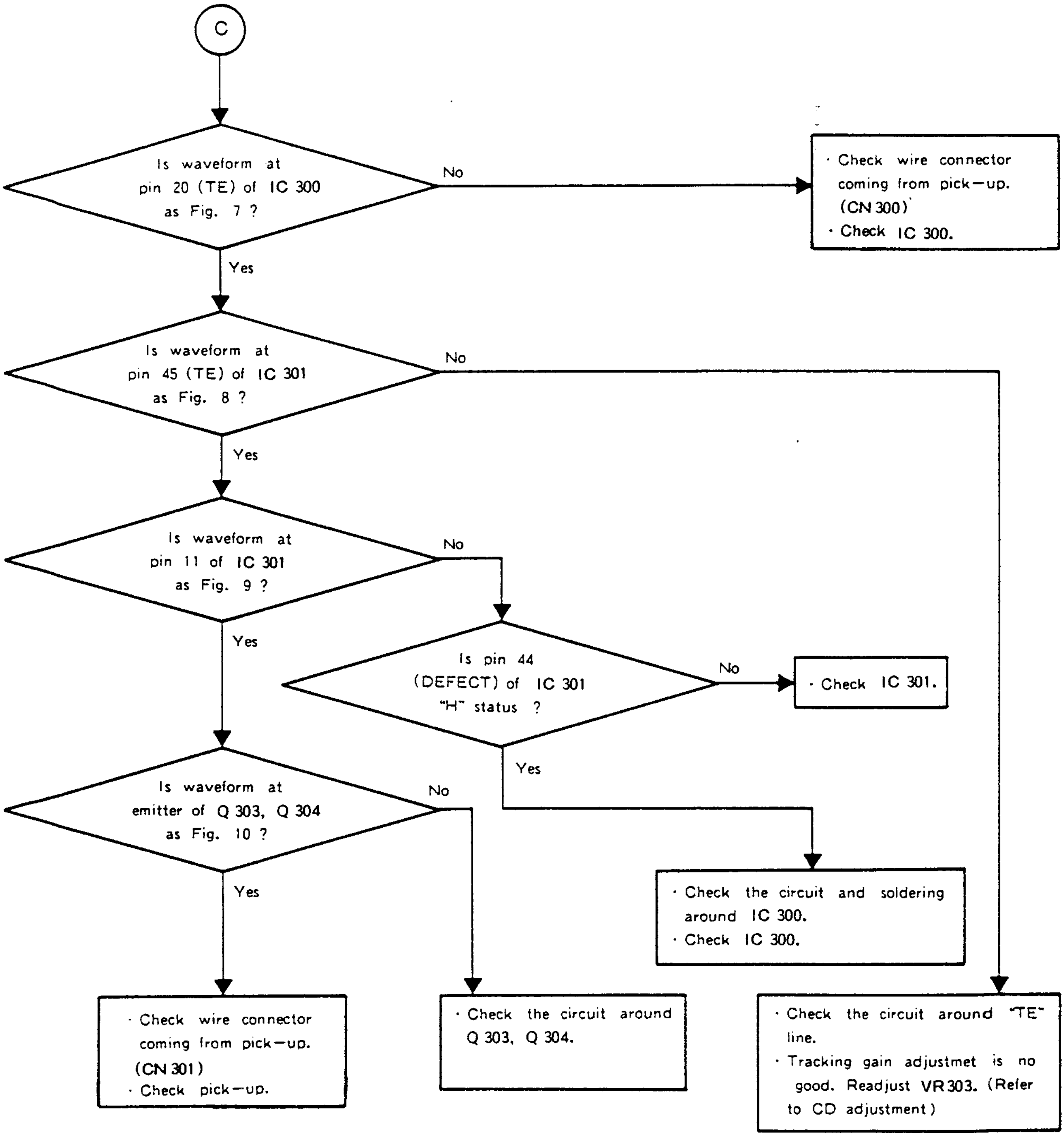

B
Watch the waveform at TP 300 (RFO) with a oscilloscope.
Waveform
1 V
≃230 nsec.
1V
1 sec.
C
Is waveform at pin 27 (EFM) of IC 300 as Fig. 6 ?
No
Yes
Is voltage at pin 26 (ASY) of IC 300 2.5V ?
No
· Check the circuit and soldering around IC 300 and IC 301.
· Check IC 304.
Yes
· Check the circuit around IC 300.
Is pin 33 (LOCK) of IC 301 "H" status ?
No
Yes
Does 8.46 MHz appear at pin 54 (XO) of IC 305 ?
No
· Check the circuit around X 300.
· Check IC 305.
Yes
· Soldering for IC 304 and IC 305.
· Check IC 304.
Does 6～10 MHz appear at pin 8 (VCOO) of IC 305 ?
No
· Check the circuit around IC 305.
· Check IC 305.
Yes
· Check the circuit and soldering around IC 301.
· PLL adjustmet is no good. Readjust VR304. (Refer to CD adjustment)
· Check IC 301.
5V
≃230 nsec.

Fig. 6

3−C


C
Is waveform at pin 20 (TE) of IC 300 as Fig. 7 ?
No
· Check wire connector coming from pick−up. (CN 300)
· Check IC 300.
Yes
Is waveform at pin 45 (TE) of IC 301 as Fig. 8 ?
No
Yes
Is waveform at pin 11 of IC 301 as Fig. 9 ?
No
Is pin 44 (DEFECT) of IC 301 "H" status ?
No
· Check IC 301.
Yes
Yes
Is waveform at emitter of Q 303, Q 304 as Fig. 10 ?
No
· Check the circuit and soldering around IC 300.
· Check IC 300.
Yes
· Check wire connector coming from pick−up. (CN 301)
· Check pick−up.
· Check the circuit around Q 303, Q 304.
· Check the circuit around "TE" line.
· Tracking gain adjustmet is no good. Readjust VR303. (Refer to CD adjustment)

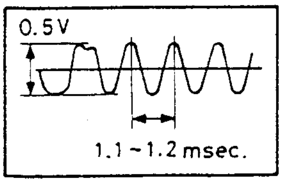


Fig. 7

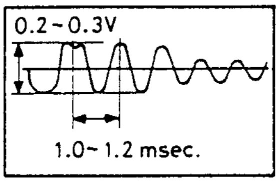


Fig. 8

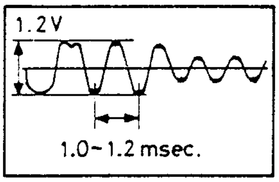


Fig. 9

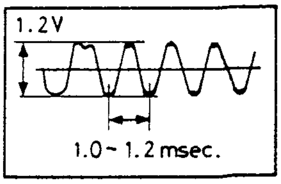
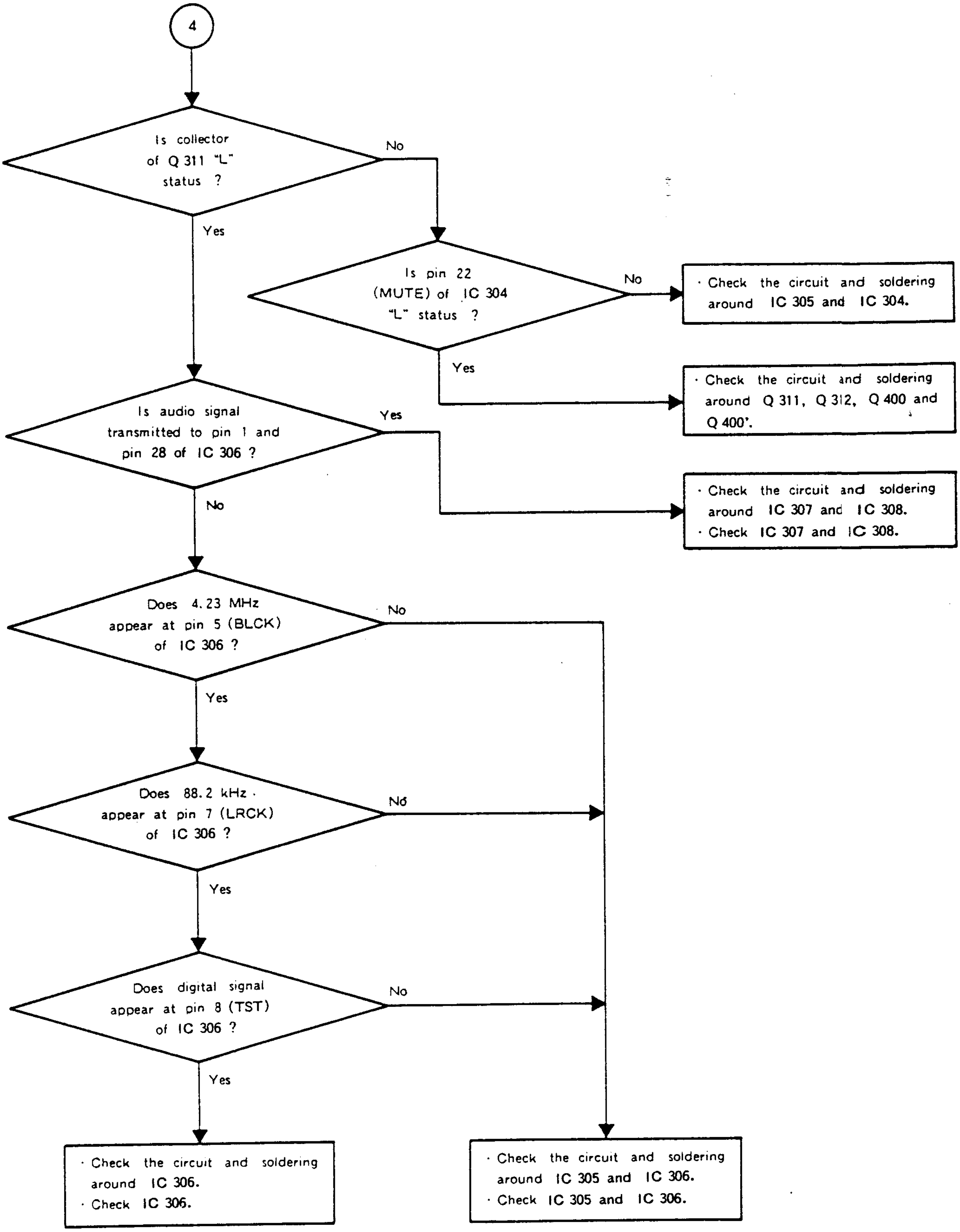
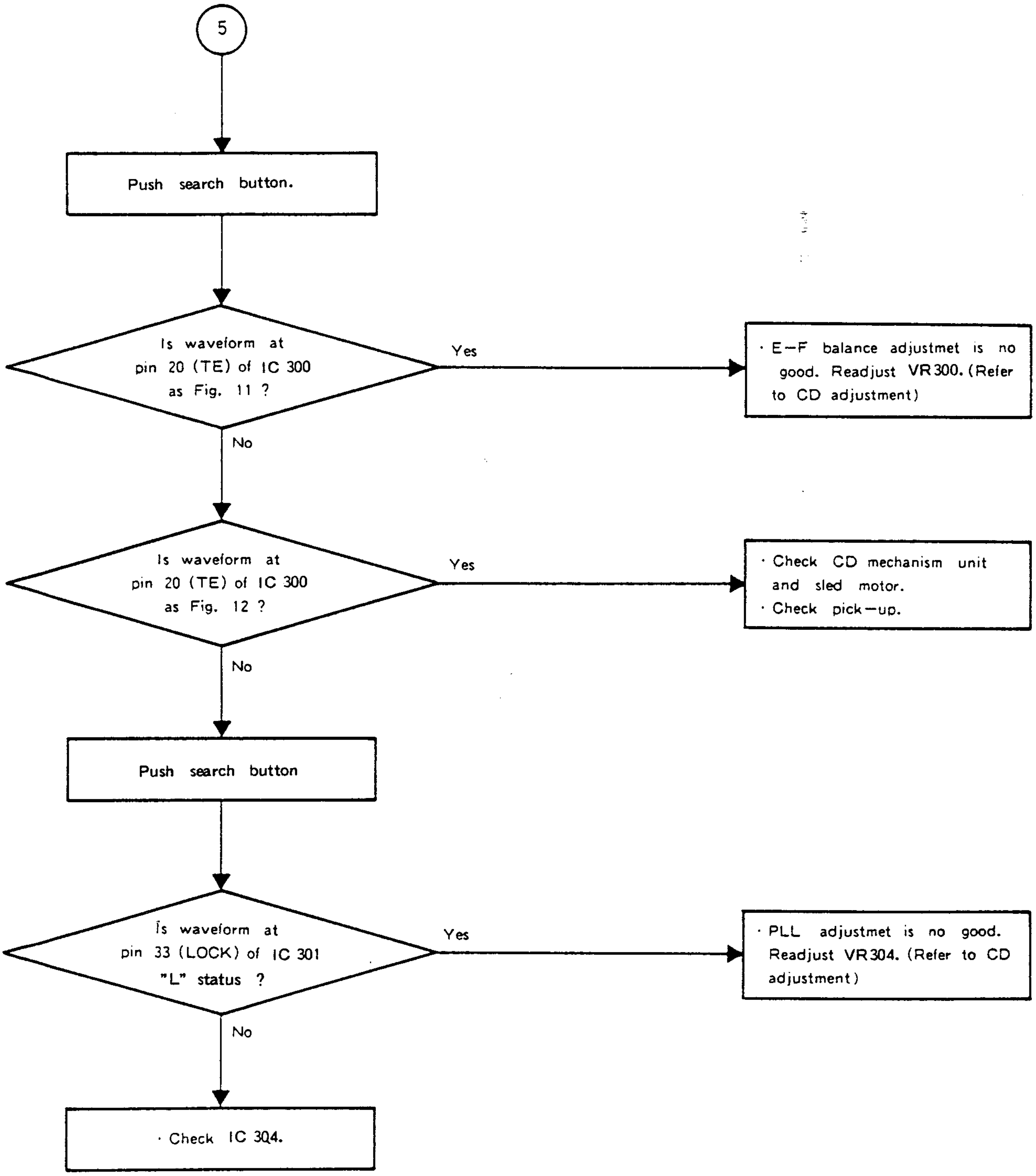


Fig. 10

Item 4 When audio-signals are transmitted to output terminals.


4
Is collector of Q 311 "L" status ?
No
Yes
Is pin 22 (MUTE) of IC 304 "L" status ?
No
· Check the circuit and soldering around IC 305 and IC 304.
Yes
· Check the circuit and soldering around Q 311, Q 312, Q 400 and Q 400'.
Is audio signal transmitted to pin 1 and pin 28 of IC 306 ?
Yes
· Check the circuit and soldering around IC 307 and IC 308.
· Check IC 307 and IC 308.
No
Does 4.23 MHz appear at pin 5 (BLCK) of IC 306 ?
No
Yes
Does 88.2 kHz appear at pin 7 (LRCK) of IC 306 ?
No
Yes
Does digital signal appear at pin 8 (TST) of IC 306 ?
No
Yes
· Check the circuit and soldering around IC 306.
· Check IC 306.
· Check the circuit and soldering around IC 305 and IC 306.
· Check IC 305 and IC 306.

Item 5 When smooth selection of programs is impossible.


5
Push search button.
Is waveform at pin 20 (TE) of IC 300 as Fig. 11 ?
Yes
· E−F balance adjustmet is no good. Readjust VR300. (Refer to CD adjustment)
No
Is waveform at pin 20 (TE) of IC 300 as Fig. 12 ?
Yes
· Check CD mechanism unit and sled motor.
· Check pick−up.
No
Push search button
Is waveform at pin 33 (LOCK) of IC 301 "L" status ?
Yes
· PLL adjustmet is no good. Readjust VR304. (Refer to CD adjustment)
No
· Check IC 304.

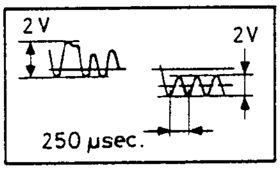

2V
2V
250 μsec.

Fig. 11

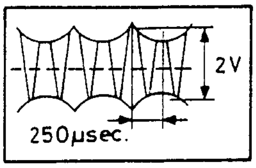
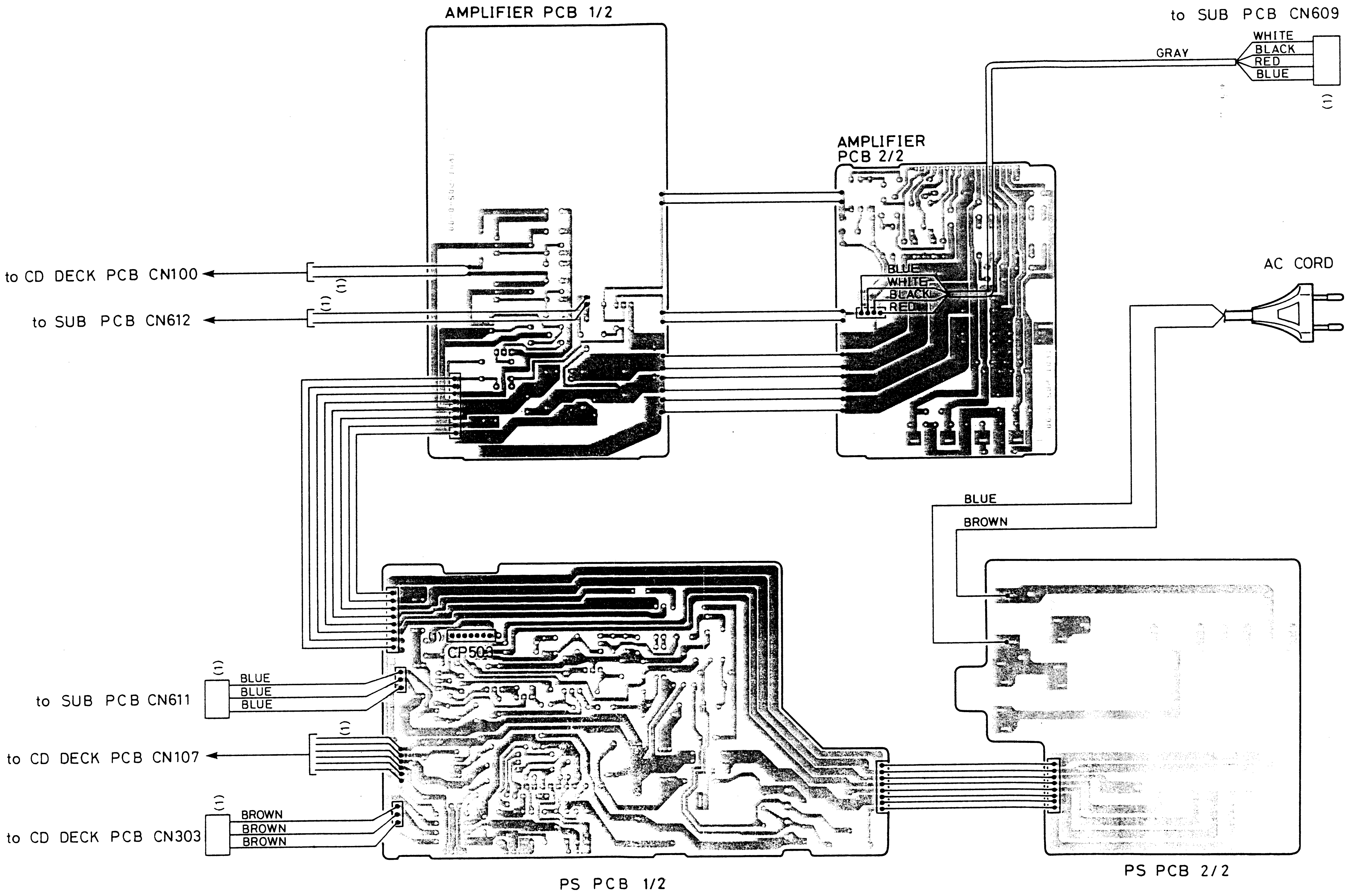
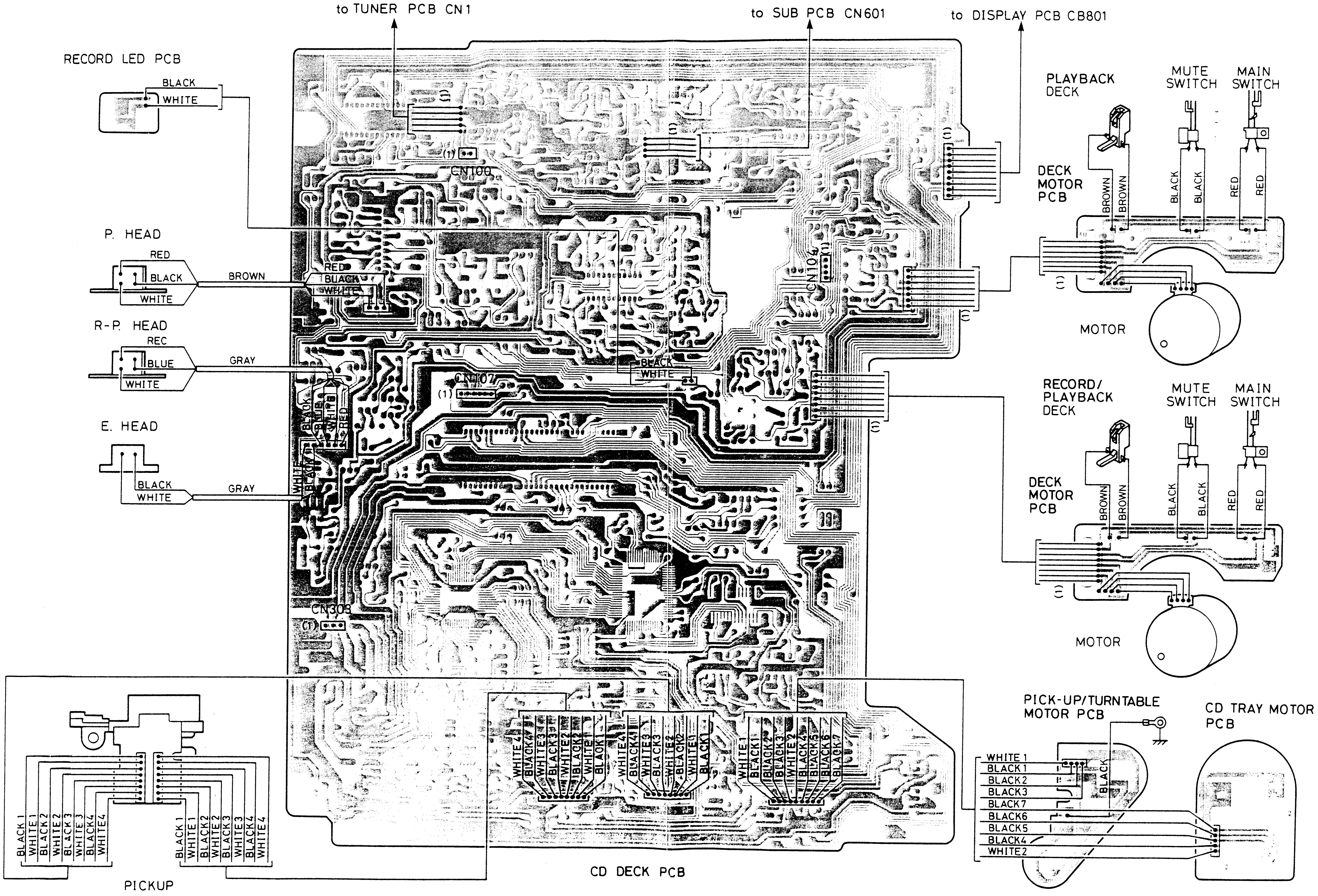


Fig. 12

WIRING DIAGRAM 3/3

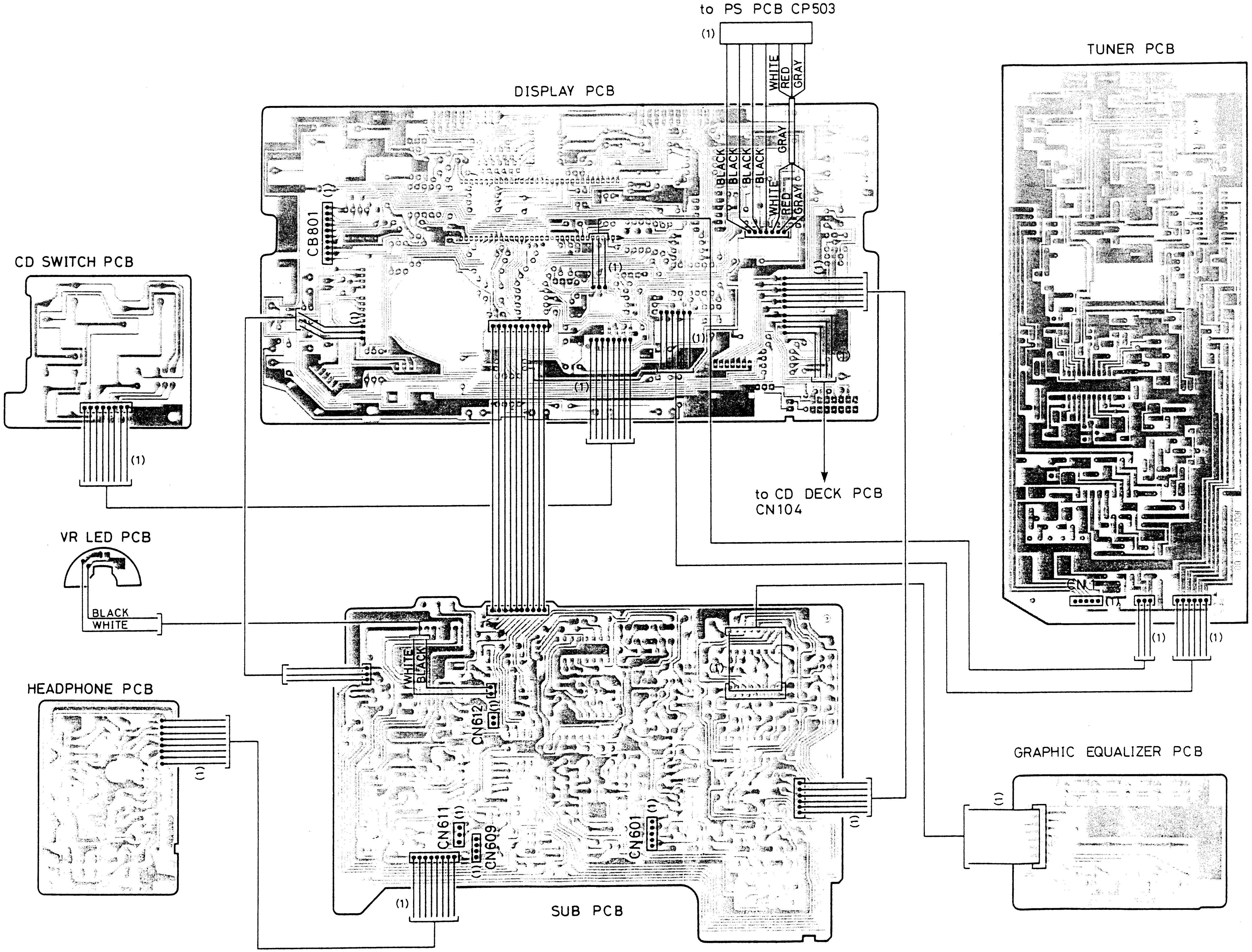

AMPLIFIER PCB 1/2
to SUB PCB CN609
GRAY
WHITE
BLACK
RED
BLUE
(1)
AMPLIFIER PCB 2/2
BLUE
WHITE
BLACK
RED
AC CORD
to CD DECK PCB CN100
(1)
to SUB PCB CN612
(1)
BLUE
BROWN
CP503
(1)
to SUB PCB CN611
BLUE
BLUE
BLUE
(1)
to CD DECK PCB CN107
(1)
to CD DECK PCB CN303
BROWN
BROWN
BROWN
PS PCB 1/2
PS PCB 2/2

WIRING DIAGRAM 1/3

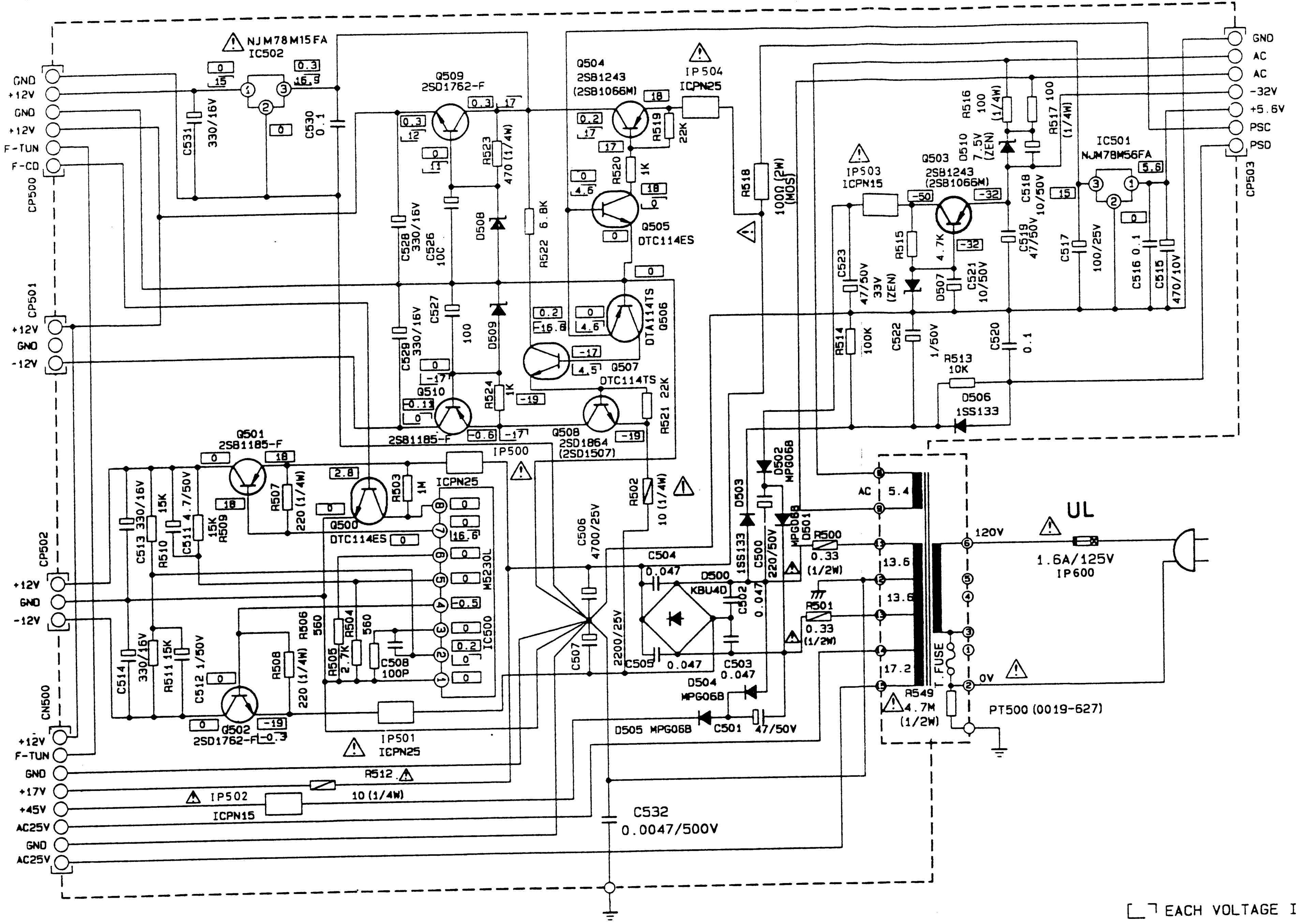

to TUNER PCB CN1
to SUB PCB CN601
to DISPLAY PCB CB801
RECORD LED PCB
BLACK
WHITE
P. HEAD
RED
BLACK
WHITE
BROWN
R-P. HEAD
REC
BLUE
WHITE
GRAY
E. HEAD
BLACK
WHITE
GRAY
CN100
CN104
CN107
CN303
(1)
PLAYBACK DECK
MUTE SWITCH
MAIN SWITCH
DECK MOTOR PCB
BROWN
BROWN
BLACK
BLACK
RED
RED
MOTOR
RECORD/ PLAYBACK DECK
MUTE SWITCH
MAIN SWITCH
DECK MOTOR PCB
BROWN
BROWN
BLACK
BLACK
RED
RED
MOTOR
PICK-UP/TURNTABLE MOTOR PCB
CD TRAY MOTOR PCB
WHITE 1
BLACK 1
BLACK 2
BLACK 3
BLACK 7
BLACK 6
BLACK 5
BLACK 4
WHITE 2
BLACK
WHITE 4
BLACK 4
WHITE 3
BLACK 3
WHITE 2
BLACK 2
WHITE 1
BLACK 1
WHITE 4
BLACK 4
WHITE 3
BLACK 3
WHITE 2
BLACK 2
WHITE 1
BLACK 1
WHITE 1
BLACK 2
BLACK 3
WHITE 2
BLACK 4
BLACK 5
BLACK 6
BLACK 7
BLACK 1
WHITE 1
BLACK 2
WHITE 2
BLACK 3
WHITE 3
BLACK 4
WHITE 4
BLACK 1
WHITE 1
BLACK 2
WHITE 2
BLACK 3
WHITE 3
BLACK 4
WHITE 4
PICKUP
CD DECK PCB

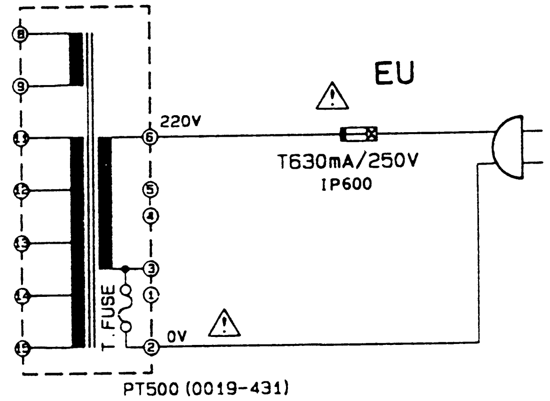
DP-1601 1/3

WIRING DIAGRAM 2/3


to PS PCB CP503
(1)
WHITE
RED
GRAY
DISPLAY PCB
BLACK
BLACK
BLACK
BLACK
WHITE
RED
GRAY
GRAY
CB801
(1)
TUNER PCB
CN1
CD SWITCH PCB
(1)
to CD DECK PCB
CN104
VR LED PCB
BLACK
WHITE
HEADPHONE PCB
WHITE
BLACK
CN612
CN611
CN609
CN601
SUB PCB
GRAPHIC EQUALIZER PCB

SCHEMATIC DIAGRAM, POWER SUPPLY


NJM78M15FA
IC502
330/16V
C531
C530
0.1
Q509
2SD1762-F
R523
470 (1/4W)
D508
R522 6.8K
C528 330/16V
C526 10C
C529 330/16V
C527 100
D509
Q510
2SB1185-F
R524 1K
Q504
2SB1243
(2SB1066M)
R519 22K
R520 1K
Q505
DTC114ES
IP504
ICPN25
Q506
DTA114TS
Q507
DTC114TS
Q508
2SD1864
(2SD1507)
R521 22K
R518
100Ω (2W)
(MOS)
IP503
ICPN15
Q503
2SB1243
(2SB1066M)
D510 7.5V (ZEN)
R516 100 (1/4W)
R517 100 (1/4W)
C518 10/50V
C519 47/50V
IC501
NJM78M56FA
C517 100/25V
C516 0.1
C515 470/10V
C523 47/50V
R515 4.7K
D507 33V (ZEN)
C521 10/50V
R514 100K
C522 1/50V
C520 0.1
R513 10K
D506 1SS133
Q501
2SB1185-F
R507 220 (1/4W)
R503 1M
Q500
DTC114ES
IP500
ICPN25
C513 330/16V
R510 15K
C511 4.7/50V
R509 15K
IC500
M5230L
C514 330/16V
R511 15K
C512 1/50V
Q502
2SD1762-F
R508 220 (1/4W)
R506 560
R505 2.7K
R504 560
C508 100P
IP501
ICPN25
R512
10 (1/4W)
IP502
ICPN15
R502 10 (1/4W)
C506 4700/25V
C507 2200/25V
C504 0.047
D500 KBU4D
C505 0.047
C503 0.047
C502 0.047
D503 1SS133
C500 220/50V
D502 MPG06B
D501 MPG06B
R500 0.33 (1/2W)
R501 0.33 (1/2W)
D504 MPG06B
D505 MPG06B
C501 47/50V
R549 4.7M (1/2W)
C532 0.0047/500V
CP500
CP501
CP502
CN500
CP503
GND
+12V
F-TUN
F-CO
-12V
+17V
+45V
AC25V
AC
-32V
+5.6V
PSC
PSD
AC 5.4
13.6
17.2
120V
0V
T.FUSE
UL
1.6A/125V
IP600
PT500 (0019-627)


EU
220V
0V
T.FUSE
T630mA/250V
IP600

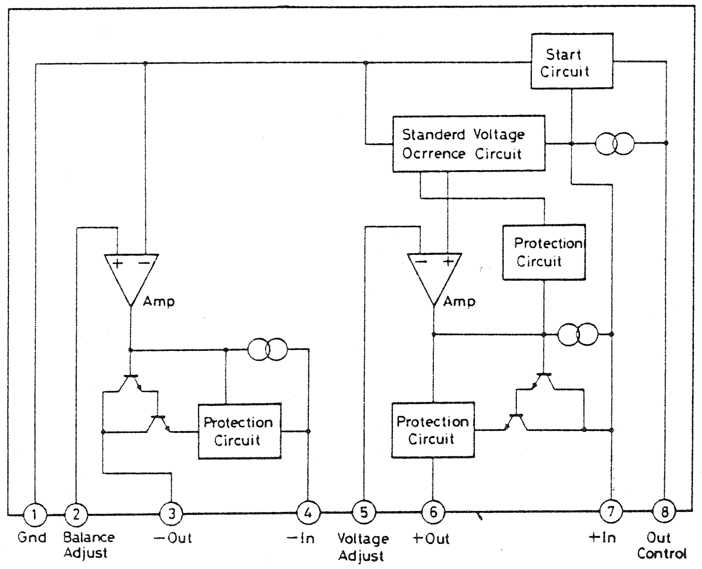
PT500 (0019-431)

[_ˀ EACH VOLTAGE IS THE VALUE WHEN THE SET IS STANDBY MODE.

[_ˀ INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS AUX MODE.

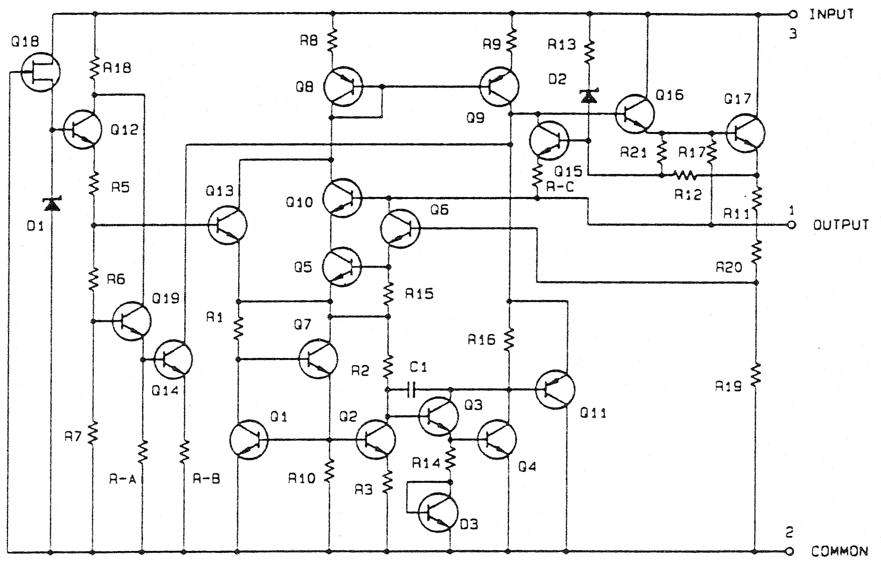
ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

IC 500: M523OL



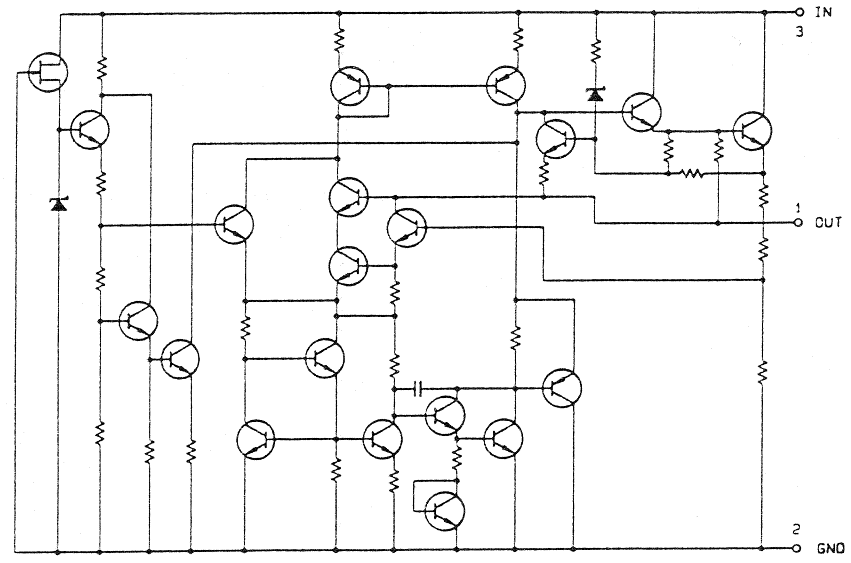
Start Circuit
Standerd Voltage Ocrrence Circuit
Protection Circuit
Amp
Protection Circuit
Protection Circuit
Amp
1 Gnd
2 Balance Adjust
3 −Out
4 −In
5 Voltage Adjust
6 +Out
7 +In
8 Out Control

IC 501: NJM78M56FA



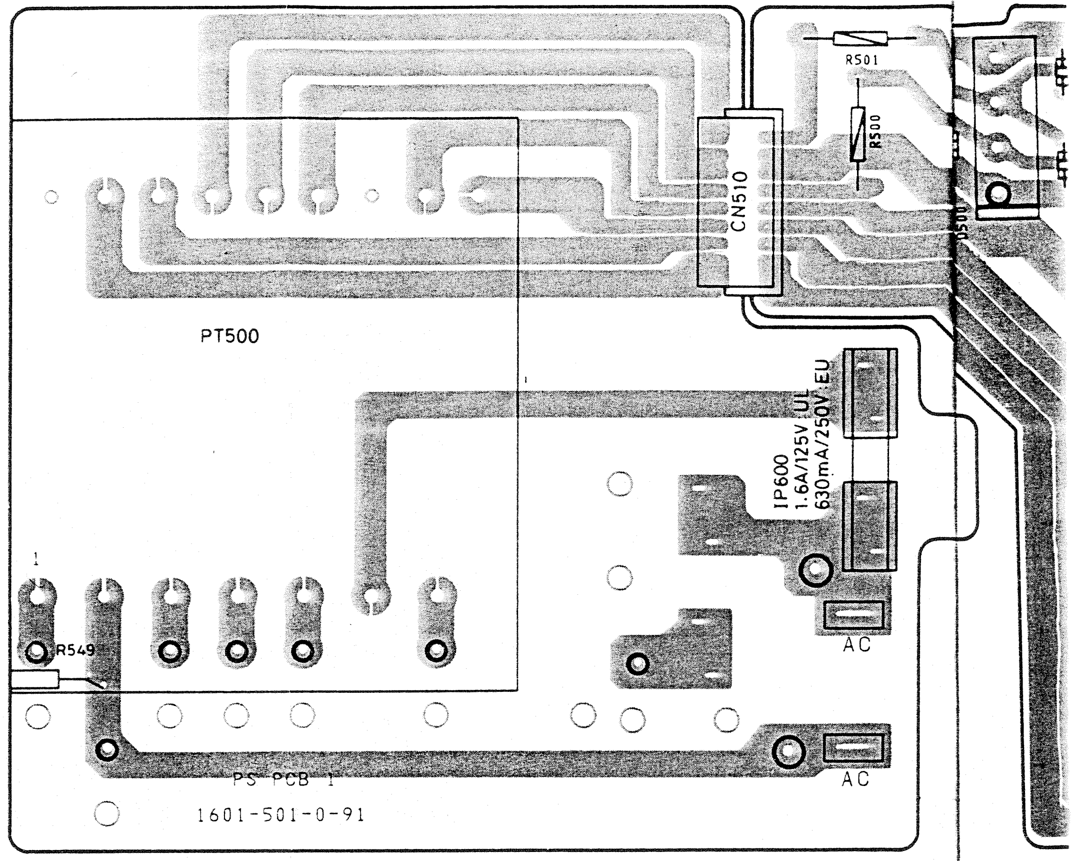
INPUT 3
OUTPUT 1
COMMON 2
Q18
R18
Q12
R5
D1
R6
Q19
Q14
R7
R-A
R-B
R1
Q13
R8
Q8
Q10
Q5
Q7
Q1
Q2
R2
R3
R10
R15
C1
Q3
Q4
R14
D3
R9
Q9
Q6
R13
D2
Q16
Q15
R-C
R21
R17
R12
R11
Q17
R16
Q11
R20
R19

IC 502: NJM78M15FA



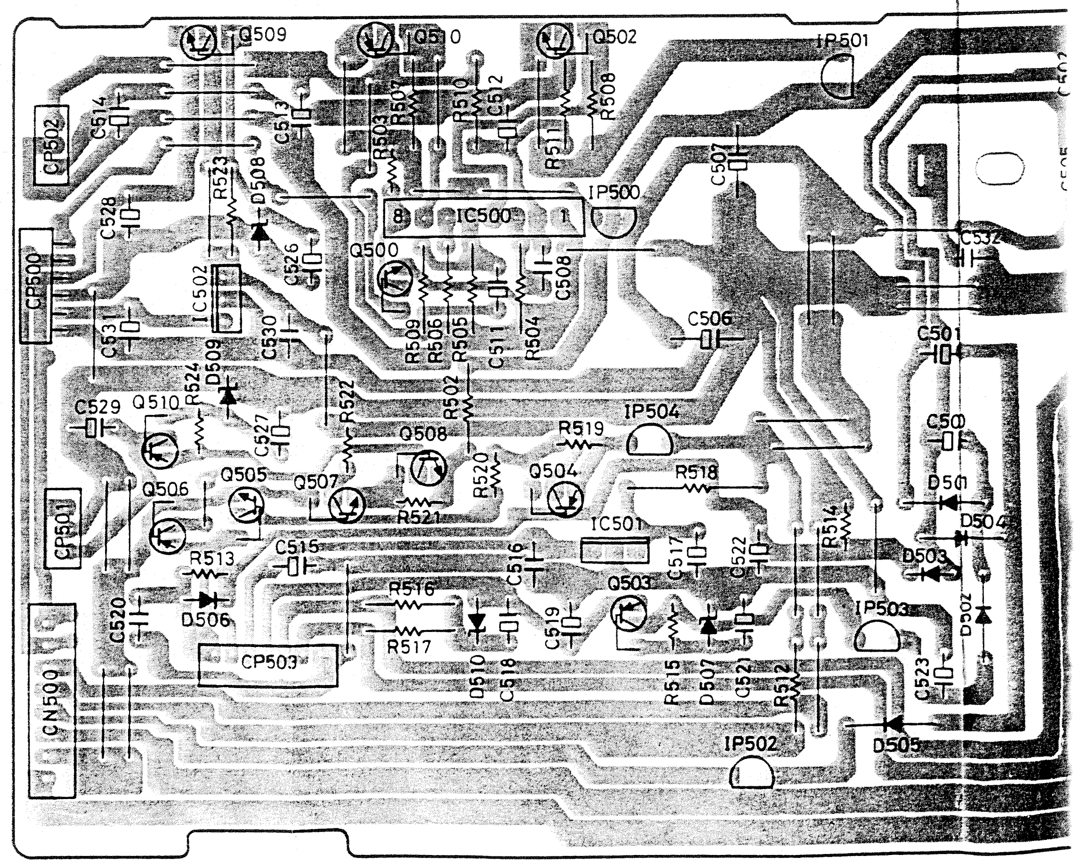
IN 3
OUT 1
GND 2

POWER SUPPLY PCB (Component Side)



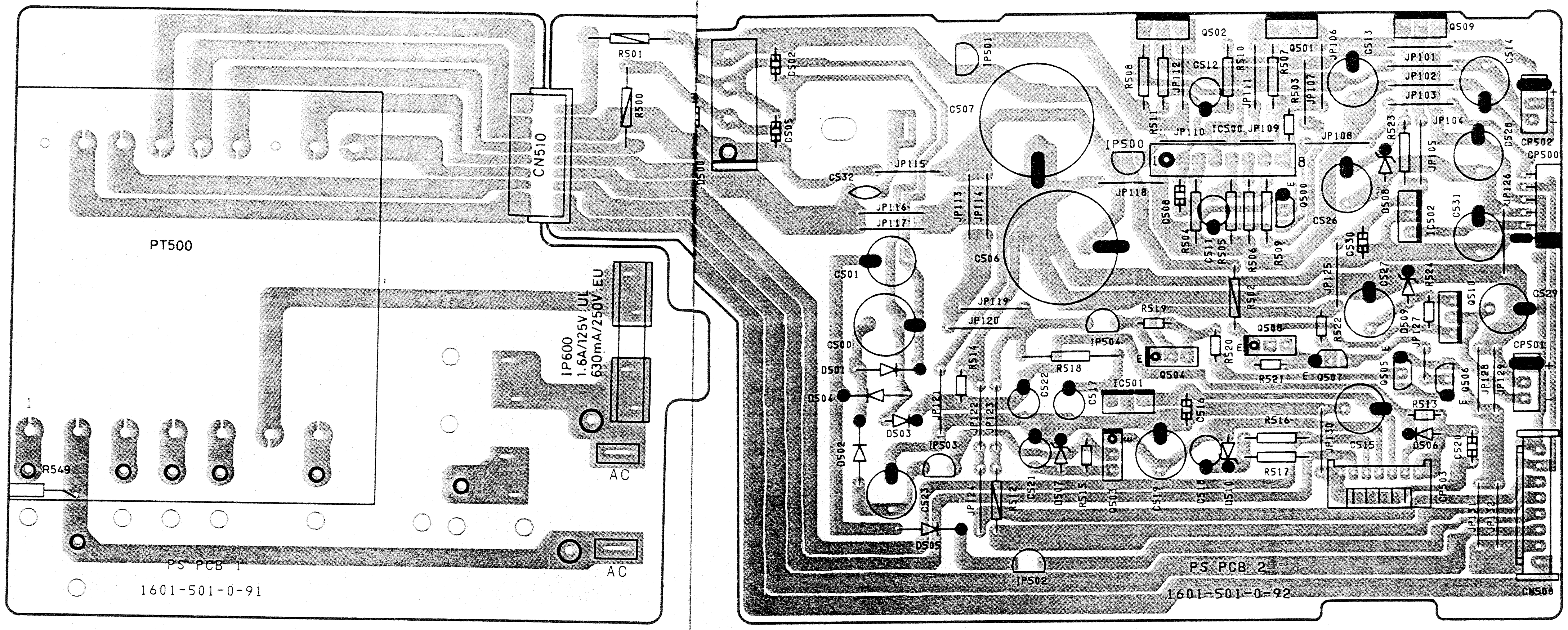
R501
R500
CN510
C500
PT500
IP600 1.6A/125V UL 630mA/250V EU
R549
AC
AC
PS PCB 1
1601-501-0-91

POWER SUPPLY PCB (Track Side)

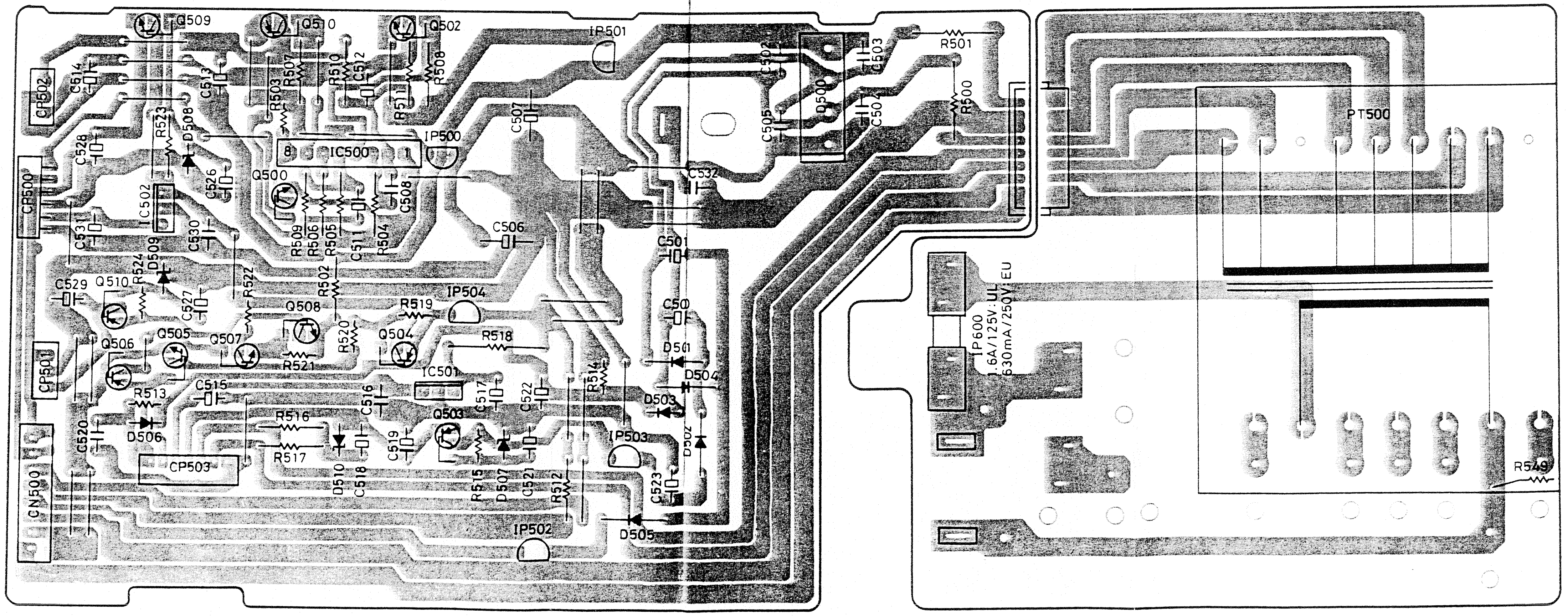


Q509
Q510
Q502
IP501
CP502
C514
C513
R503
R507
R510
C512
R511
R508
C507
R523
D508
IP500
IC500
C528
C526
Q500
C508
CP500
IC502
C531
C530
R509
R506
R505
R502
C511
R504
C506
C501
C529
Q510
R524
D509
R522
C527
Q508
R519
IP504
C50
Q506
Q505
Q507
R520
Q504
R518
D501
D504
CP501
R521
IC501
R513
C515
R516
C516
C517
C522
R514
D503
Q503
D506
C520
C519
IP503
D502
CP503
R517
D510
C518
R515
D507
C521
R512
C523
CN500
IP502
D505

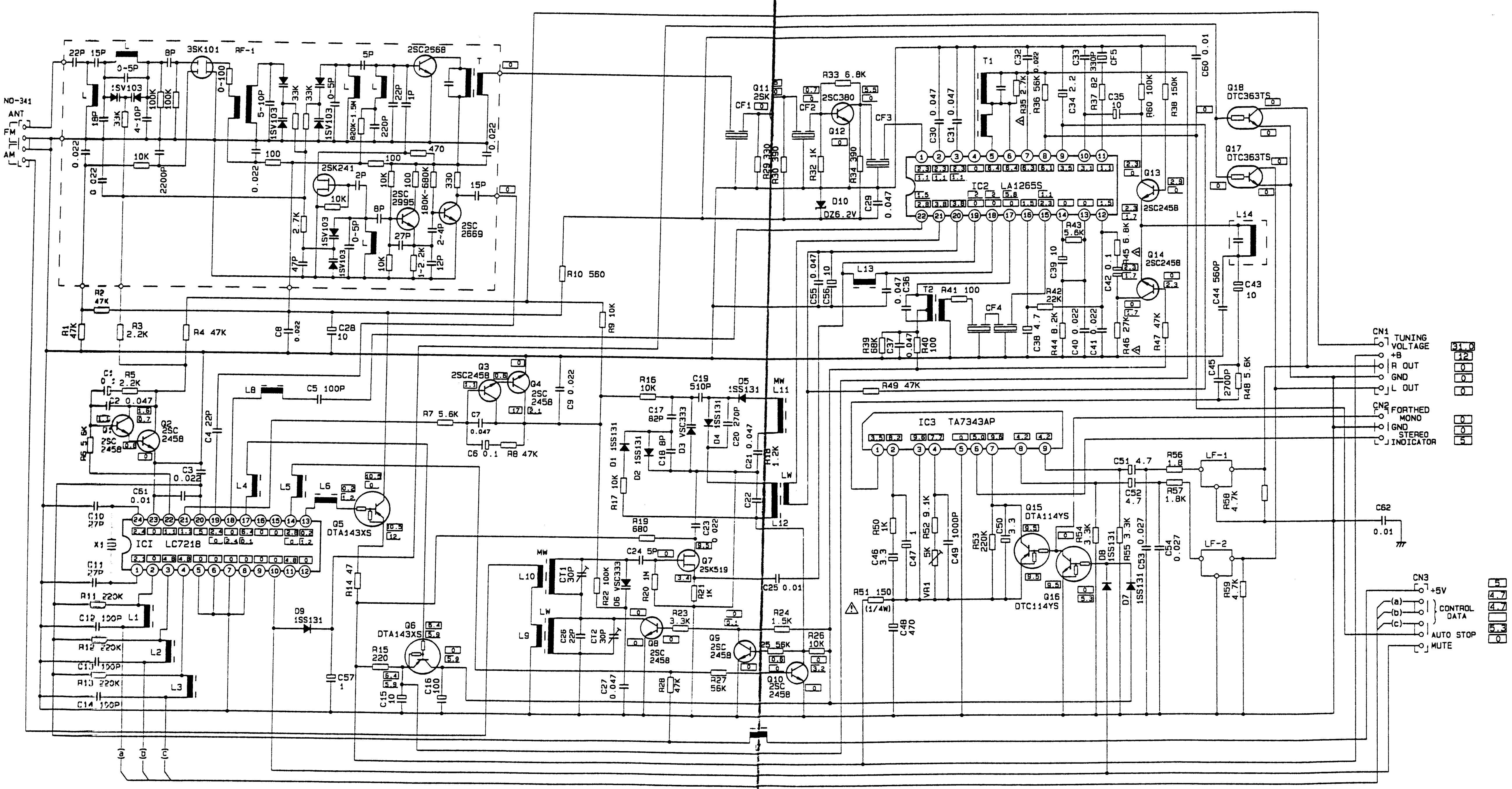
POWER SUPPLY PCB (Component Side)


PT500
CN510
R501
R500
IP600
1.6A/125V UL
630mA/250V EU
AC
AC
R549
PS PCB 1
1601-501-0-91
PS PCB 2
1601-501-0-92
D500
C502
C505
C507
C532
JP115
JP116
JP117
JP113
JP114
JP118
IP500
IC500
Q502
Q501
Q509
JP101
JP102
JP103
JP104
C513
C514
CP502
CP500
C501
C500
C506
D501
D504
D503
D502
IP503
IP504
IC501
R518
R519
R520
R521
Q508
Q504
Q507
Q505
Q506
Q510
R513
R516
R517
C515
D506
C529
CP501
C528
C531
C526
C527
C530
IC502
JP119
JP120
IP502
D505
CN500

POWER SUPPLY PCB (Track Side)


Q509
Q510
Q502
IP501
R501
R500
CP502
C514
C513
R503
R507
R510
C512
R511
R508
R523
D508
C528
IC500
IP500
C507
C505
D500
C503
C504
C502
PT500
CP500
C526
Q500
C508
IC502
C531
C530
R509
R506
R505
C511
R504
C506
C532
C501
C529
Q510
R524
D509
C527
R522
Q508
R502
R519
IP504
C500
Q505
Q507
R520
Q504
R518
D501
D504
Q506
CP501
R521
IC501
R514
D503
D502
R513
C515
C516
C517
C522
IP503
IP600
1.6A/125V UL
630mA/250V EU
D506
R516
R517
C520
CP503
D510
C518
C519
Q503
R515
D507
C521
R512
C523
CN500
IP502
D505
R549

TUNER SCHEMATIC DIAGRAM


NO-341
ANT
FM
AM
3SK101
RF-1
2SC2568
2SK241
2SC2995
2SC2669
1SV103
Q11 2SK
CF1
CF2
CF3
Q12 2SC380
D10 DZ6.2V
IC2 LA1265S
T1
T2
L13
CF4
Q13 2SC2458
Q14 2SC2458
Q18 DTC363TS
Q17 DTC363TS
L14
Q3 2SC2458
Q4 2SC2458
Q1 2SC2458
Q2 2SC2458
L8
L4
L5
L6
Q5 DTA143XS
IC1 LC7218
X1
L1
L2
L3
D9 1SS131
Q6 DTA143XS
R10 560
R9 10K
R49 47K
MW L11
LW L12
D5 1SS131
D4 1SS131
D3 VSC333
D1 1SS131
D2 1SS131
Q7 2SK519
L10
L9
CT1 30P
CT2 30P
Q8 2SC2458
Q9 2SC2458
Q10 2SC2458
IC3 TA7343AP
Q15 DTA114YS
Q16 DTC114YS
VR1
LF-1
LF-2
C62 0.01
CN1
TUNING VOLTAGE
+B
R OUT
GND
L OUT
CN2
FORTHED MONO
GND
STEREO INDICATOR
CN3
+5V
CONTROL DATA
AUTO STOP
MUTE
(a)
(b)
(c)

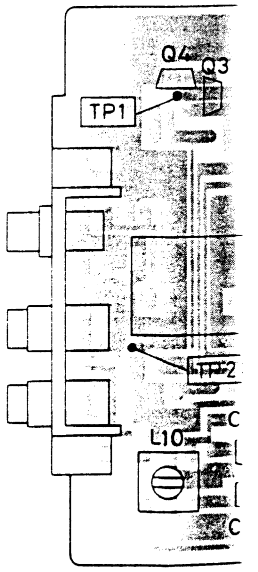
▭ EACH VOLTAGE IS THE VALUE WHEN THE SET IS FM AND LW MODE

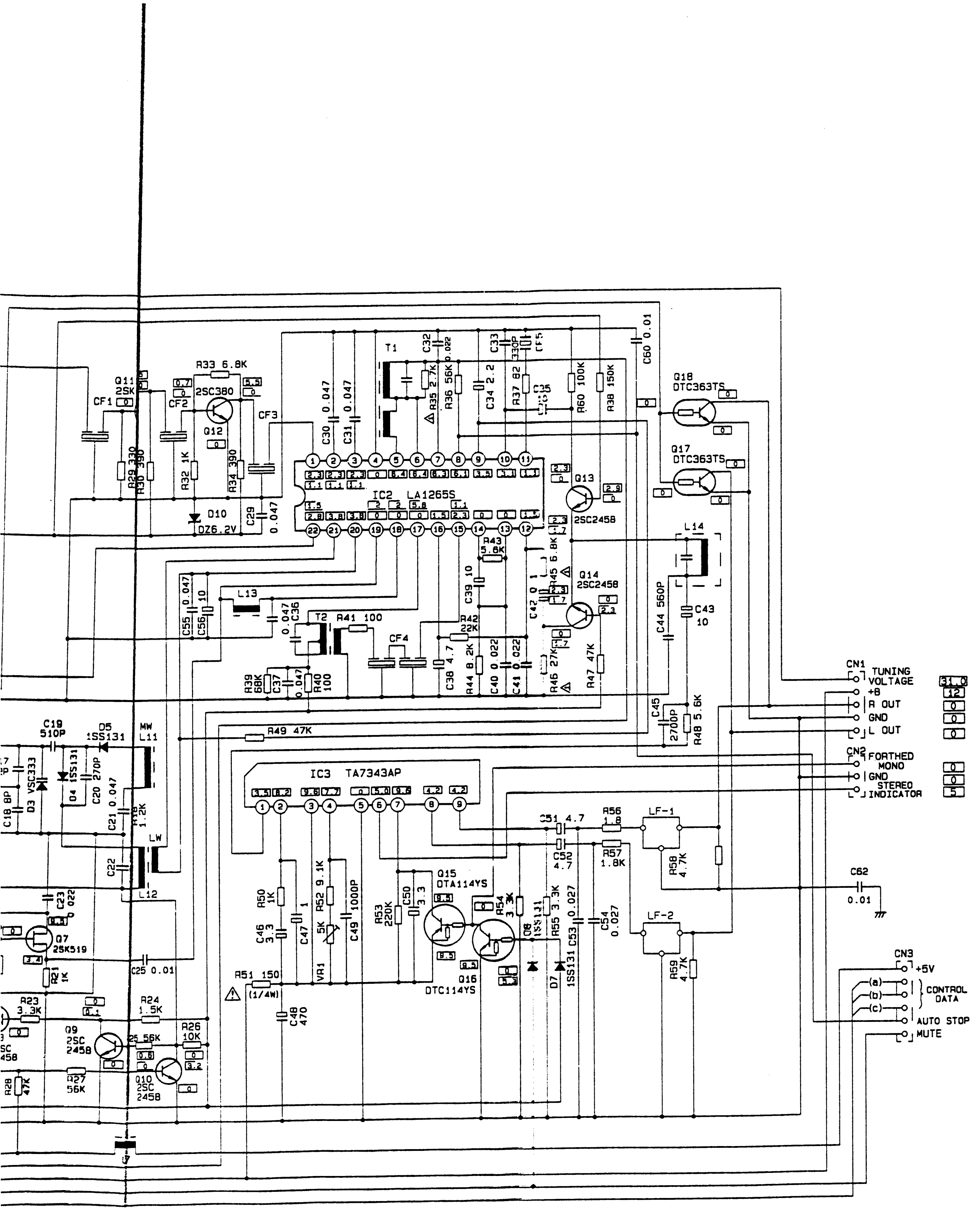
⊏ EACH VOLTAGE IS THE VALUE WHEN THE SET IS MW MODE

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

SK...
Varicap alignr
FM 87.5 - 108MH
LW 146 - 290kH
MW 531 - 1602kH
IF alignment
AM $
FM
RF alignment
MW $
LW $
Stereo decode
FM

TUNER TEST


Q4
Q3
TP1
TP2
L10


IC2 LA1265S
IC3 TA7343AP
T1
T2
L11
L12
L13
L14
LF-1
LF-2
CF1
CF2
CF3
CF4
CF5
Q11 2SK
Q12 2SC380
Q13 2SC2458
Q14 2SC2458
Q15 DTA114YS
Q16 DTC114YS
Q17 DTC363TS
Q18 DTC363TS
Q7 2SK519
Q9 2SC2458
Q10 2SC2458
D10 DZ6.2V
D5 1SS131
D3 VSC333
D7 1SS131
D8 1SS131
R33 6.8K
R49 47K
R51 150 (1/4W)
VR1
MW
LW
CN1
TUNING VOLTAGE
+8
R OUT
GND
L OUT
CN2
FORTHED MONO
GND
STEREO INDICATOR
CN3
+5V
CONTROL DATA
AUTO STOP
MUTE
C62 0.01

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

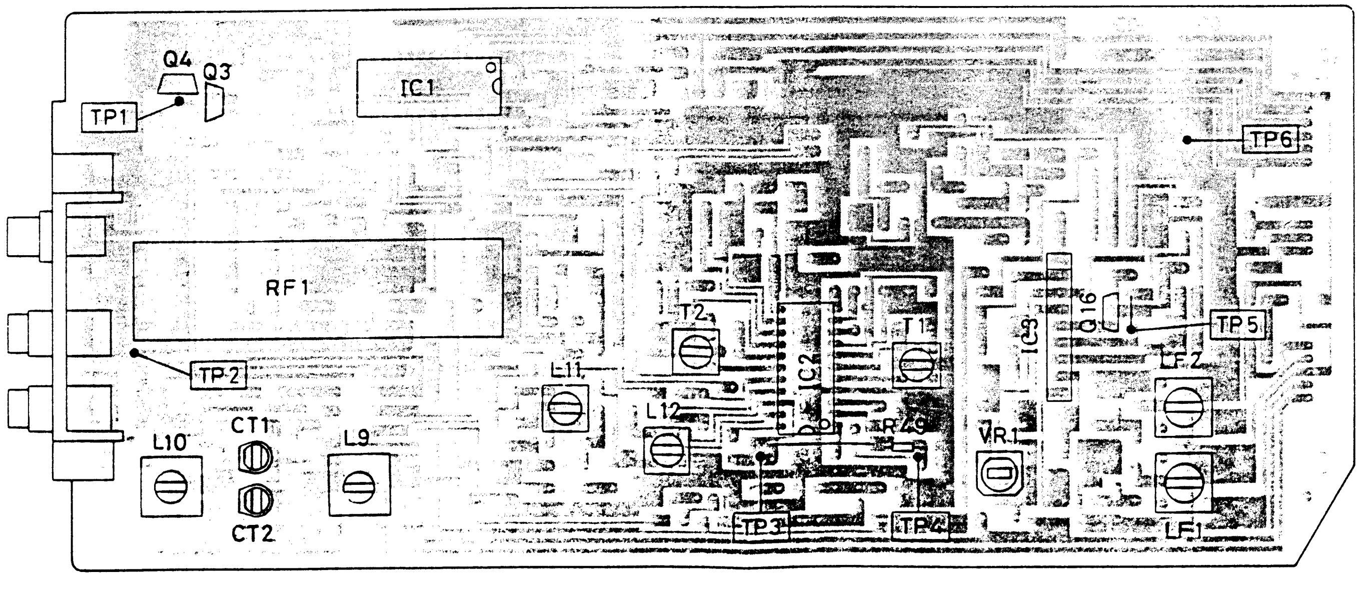
SK...		◇	▭		◇	
Varicap alignment						
FM 87.5 - 108MHz					*1	
LW 146 - 290kHz			146kHz	L12		2.1V
MW 531 - 1602kHz			531kHz	L11		2.1V
IF alignment						
AM $	999kHz	#1	999kHz	T2	*2	max.
FM	98MHz no mod.	#2	98MHz	T1	*3	0V ± 10mV
RF alignment						
MW $	603kHz 1404kHz	#1	603kHz 1404kHz	L10 CT1	*2	max ↕
LW $	146kHz 290kHz		146kHz 290kHz	L9 CT2		
Stereo decoder						
FM	83MHz carrier 1mV	#2	83MHz	VR1	*4	38 ± 0.06kHz

$ Mod 400Hz 30% AM
#1 see figure 1
#2 see figure 2 and 3

*1 Across TP1 and TP2 (Ground)
*2 Across speaker output
*3 Across TP3 and TP4
*4 Across TP5 and TP6 (Ground)

↕ **repeat**

TUNER TEST


Q4
Q3
TP1
IC1
TP6
RF1
T2
L11
L12
IC2
R49
T1
IC3
Q16
TP5
LF2
TP2
CT1
L10
L9
CT2
TP3
TP4
VR1
LF1

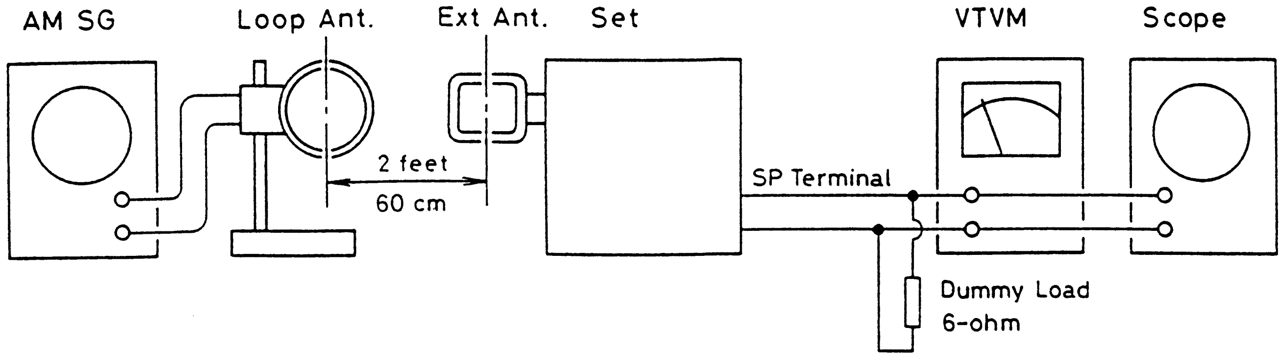

AM SG
Loop Ant.
Ext Ant.
Set
VTVM
Scope
2 feet
60 cm
SP Terminal
Dummy Load
6-ohm

Figure 1

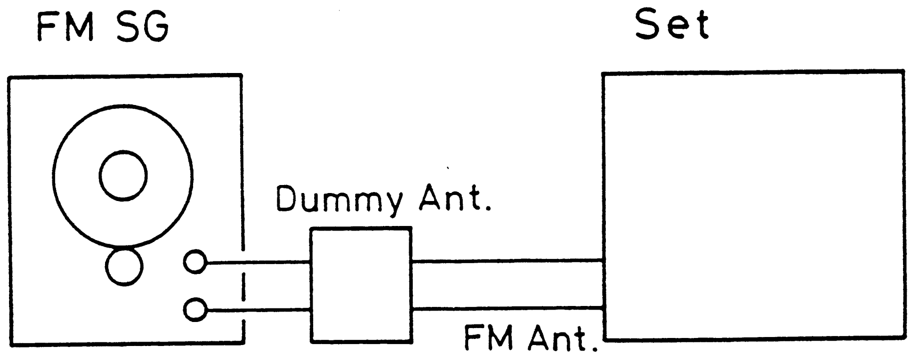
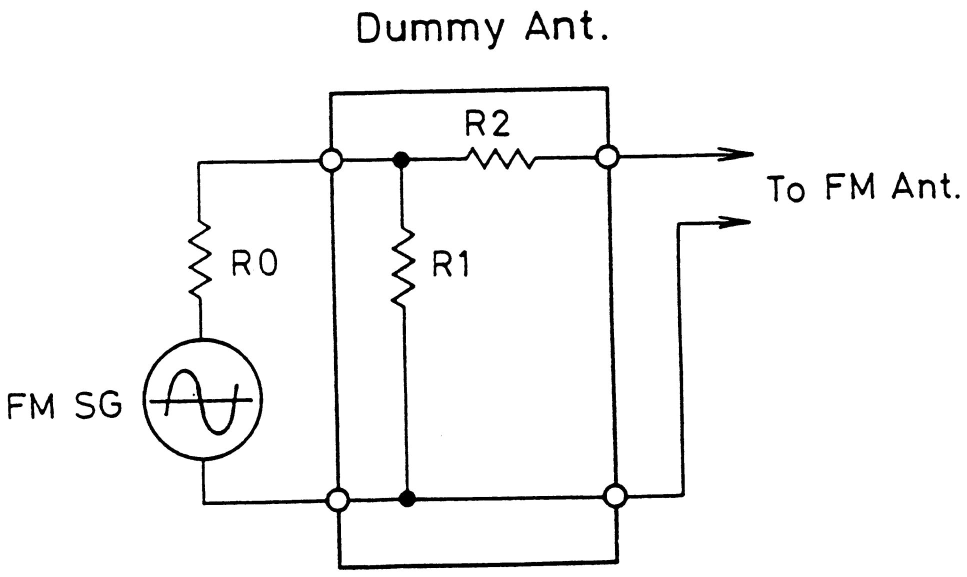

FM SG
Set
Dummy Ant.
FM Ant.

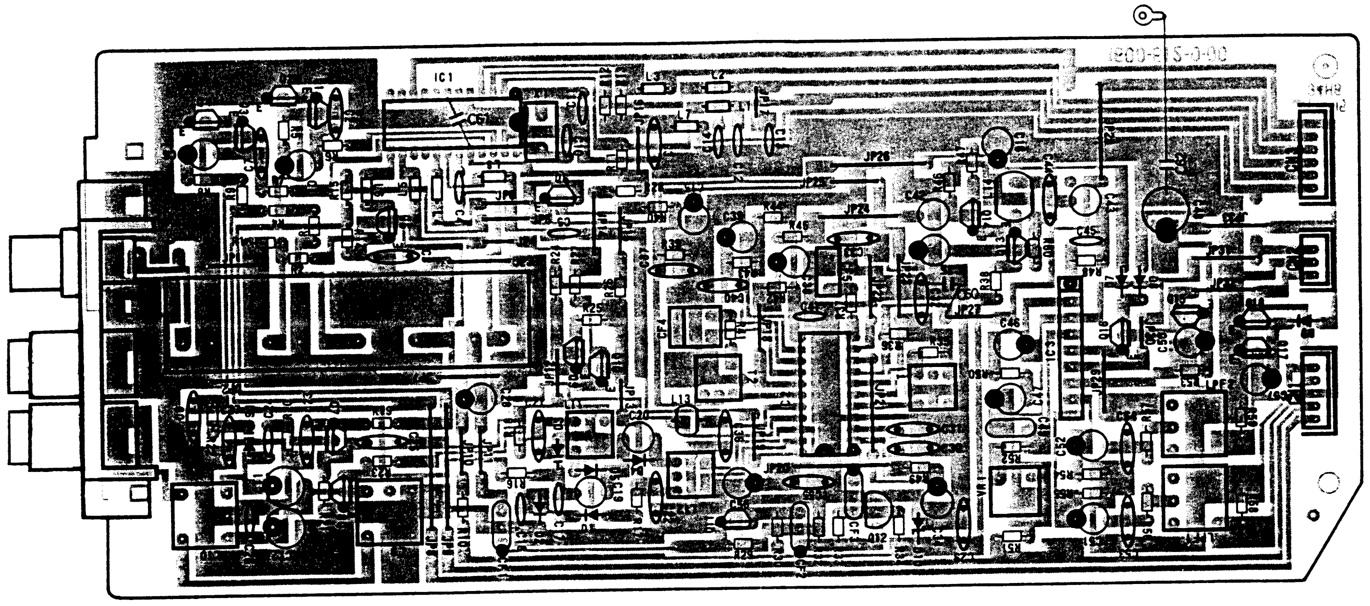
Figure 2


Dummy Ant.
R2
R0
R1
FM SG
To FM Ant.

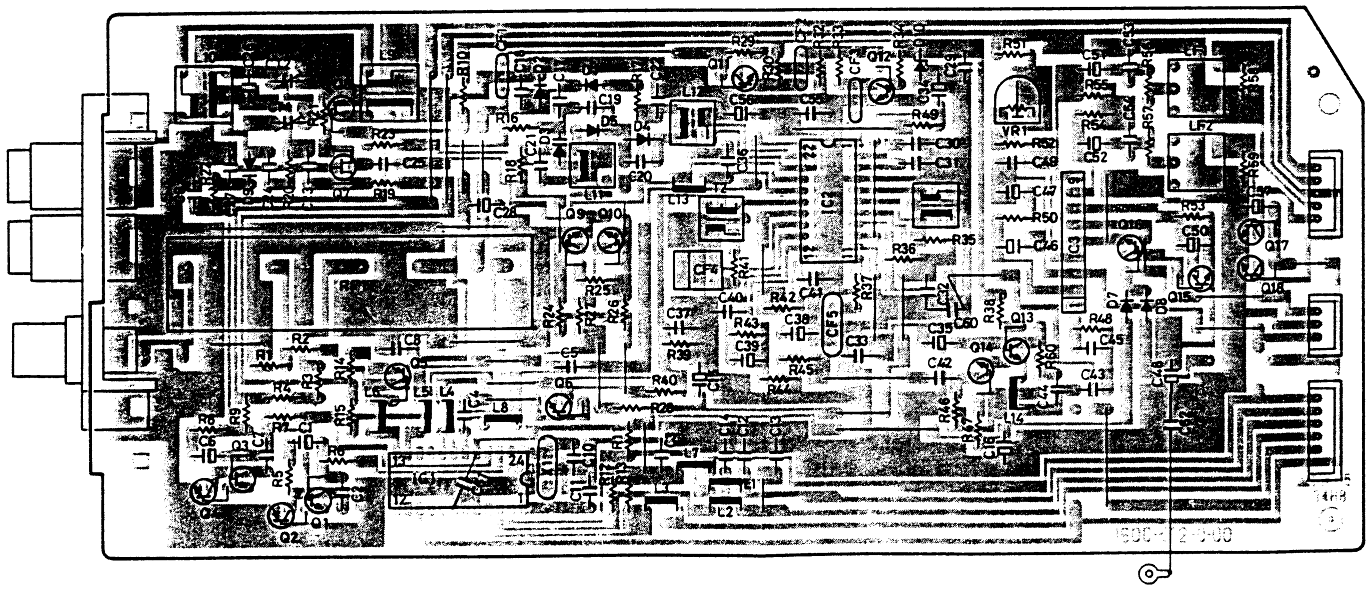
$R2 = 75\Omega - \frac{RO}{2}$, RO = Output independence of SG

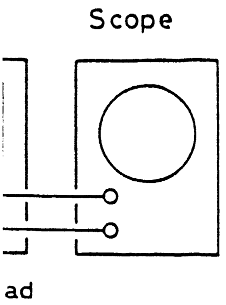
Figure 3

TUNER PCB (Component Side)

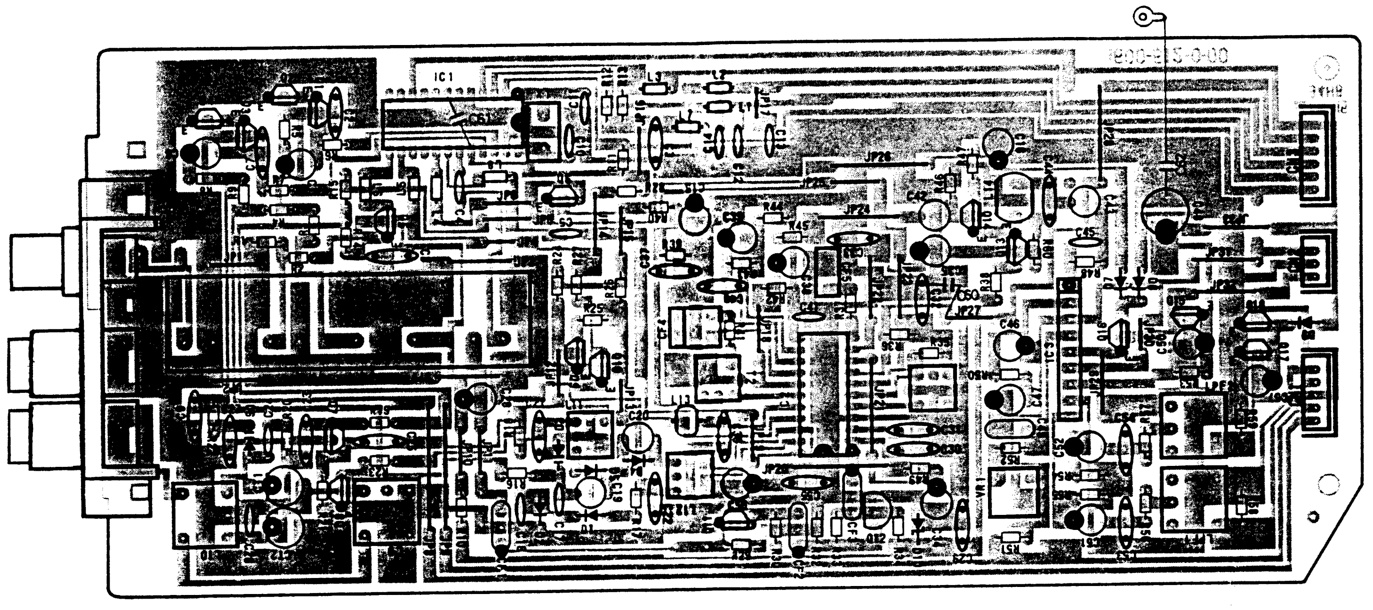


TUNER (Track Side)

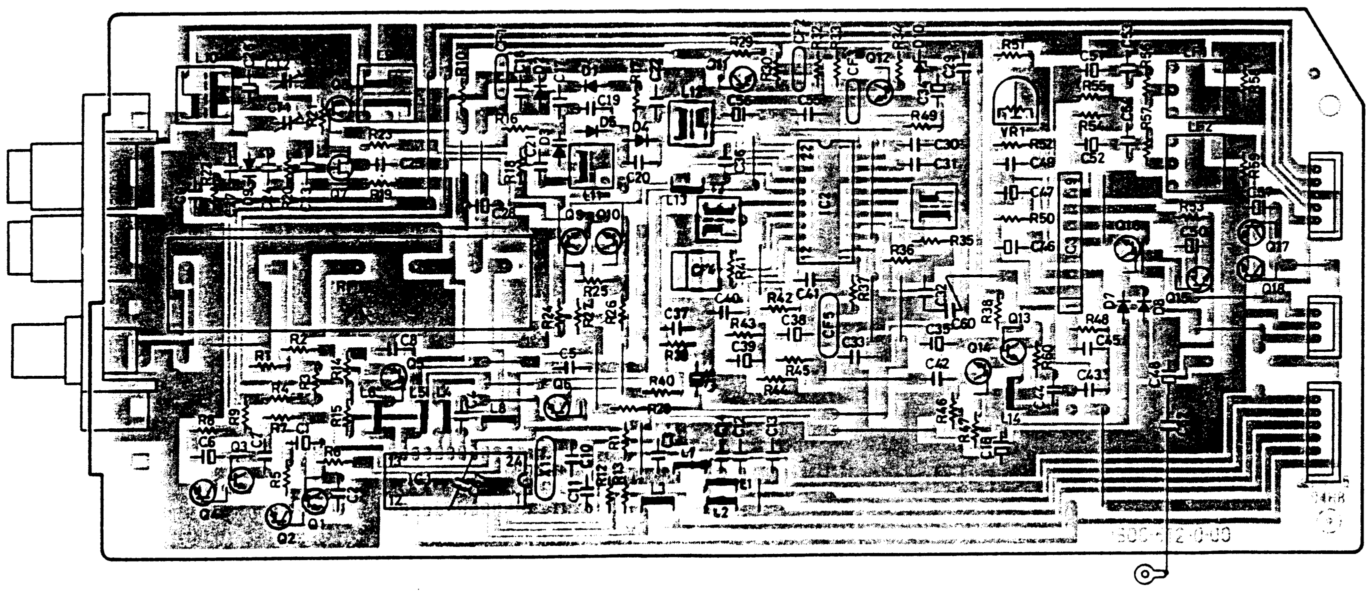




TUNER PCB (Component Side)

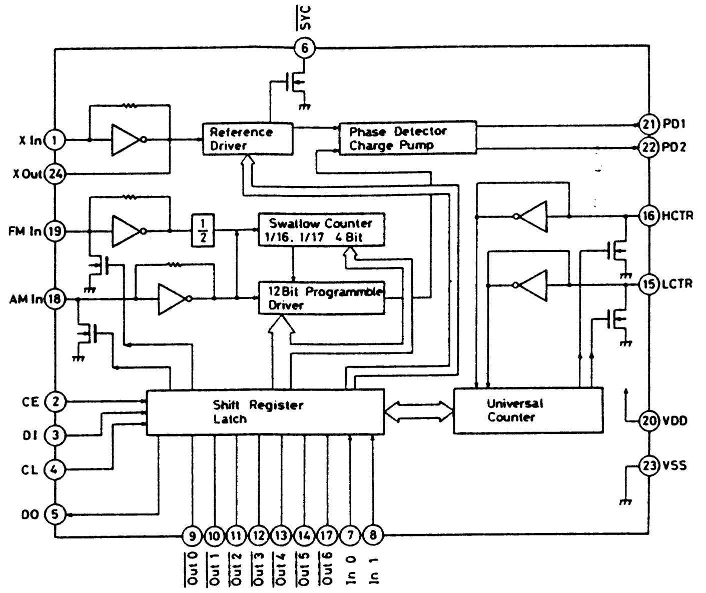


TUNER (Track Side)

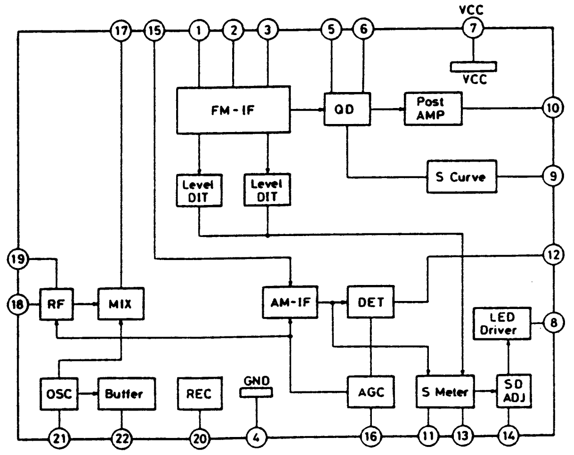


DP-1600

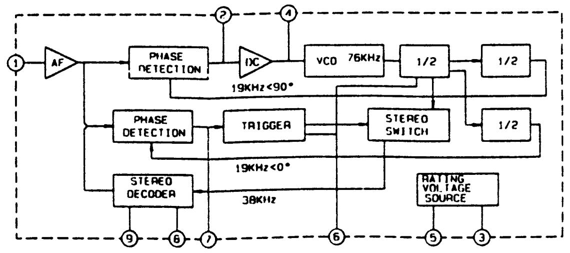
IC 1: LC7218


SYC
6
X In 1
X Out 24
FM In 19
AM In 18
CE 2
DI 3
CL 4
DO 5
Reference Driver
Phase Detector Charge Pump
1/2
Swallow Counter 1/16, 1/17 4 Bit
12Bit Programmble Driver
Shift Register Latch
Universal Counter
21 PD1
22 PD2
16 HCTR
15 LCTR
20 VDD
23 VSS
9 10 11 12 13 14 17 7 8
Out 0
Out 1
Out 2
Out 3
Out 4
Out 5
Out 6
In 0
In 1

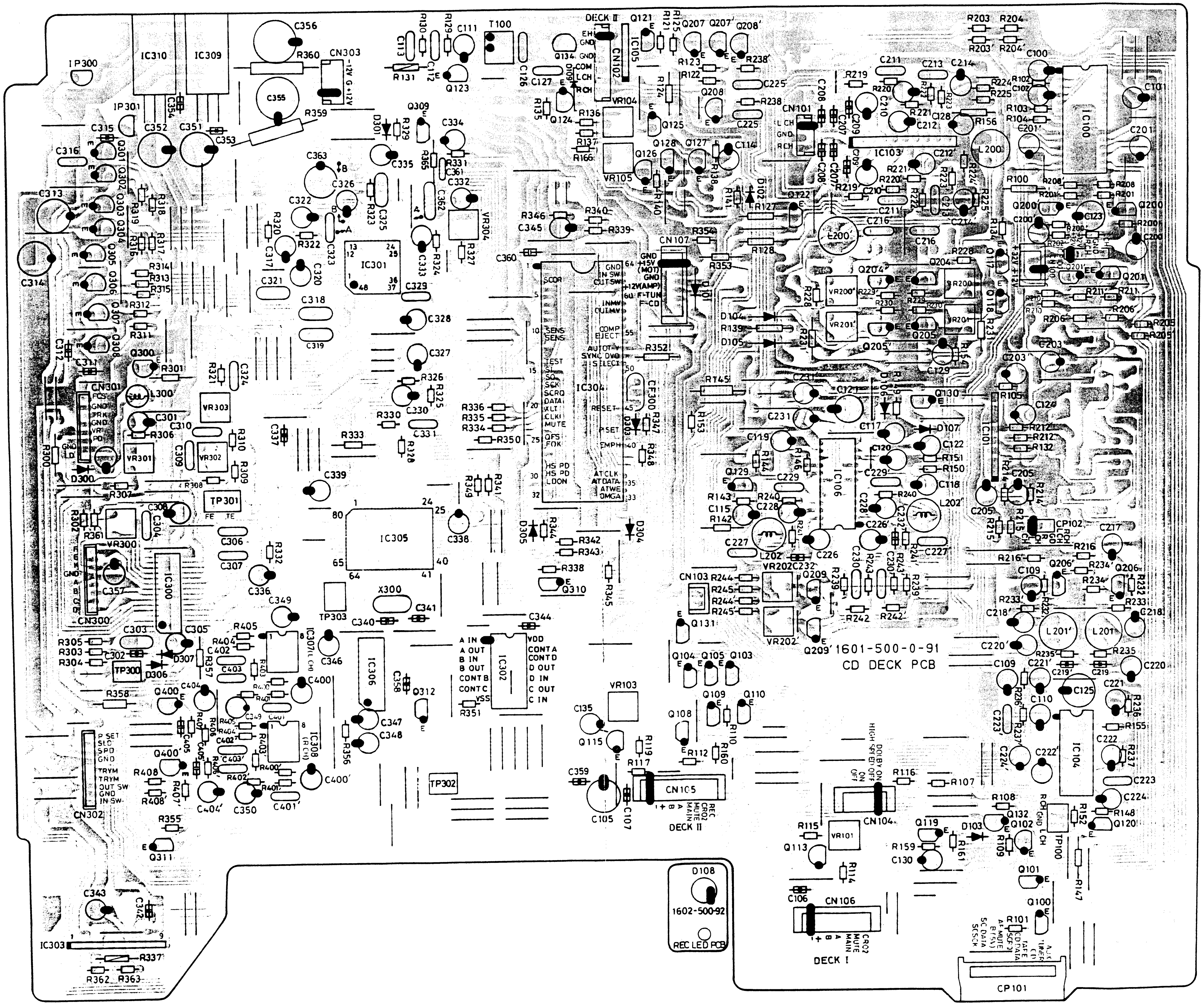
IC 2: LA1265S


VCC
17 15 1 2 3 5 6 7
VCC
FM-IF
QD
Post AMP
10
S Curve
9
Level DIT
Level DIT
12
19
18
RF
MIX
AM-IF
DET
LED Driver
8
OSC
Buffer
REC
GND
AGC
S Meter
SD ADJ
21 22 20 4 16 11 13 14

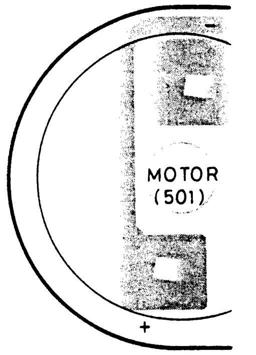
IC 3: TA7343AP

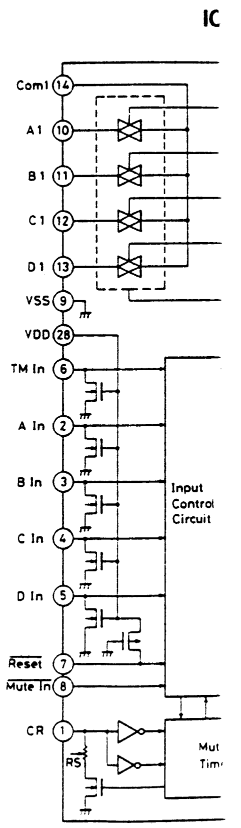

2
4
1
AF
PHASE DETECTION
DC
VCO 76KHz
1/2
1/2
19KHz<90°
PHASE DETECTION
TRIGGER
STEREO SWITCH
1/2
19KHz<0°
STEREO DECODER
38KHz
RATING VOLTAGE SOURCE
9 6 7 6 5 3

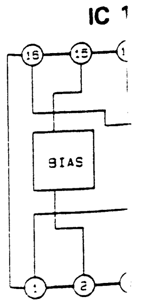
DECK/CD PCB (Component Side)

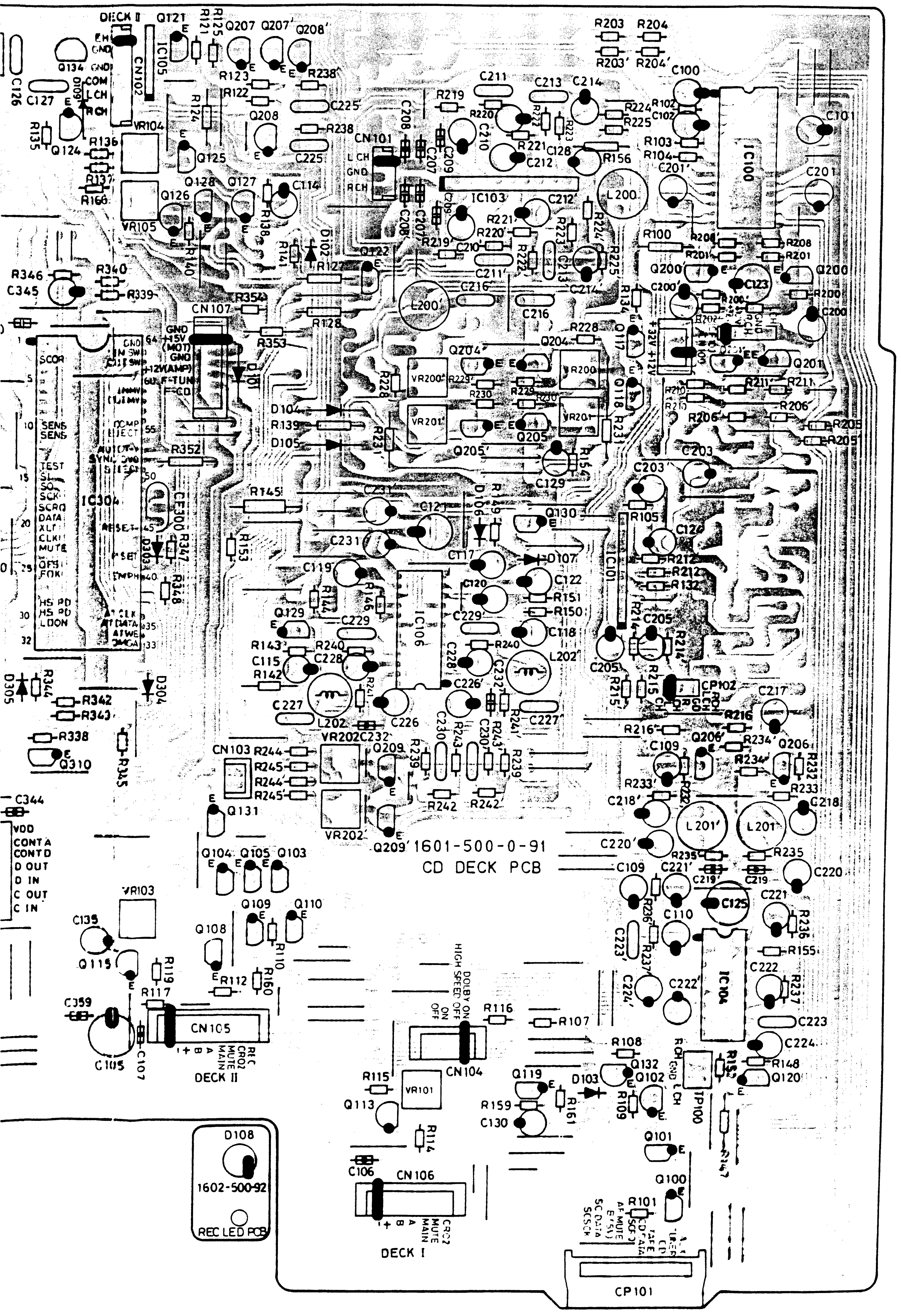

1601-500-0-91
CD DECK PCB
1602-500-92
REC LED PCB
DECK I
DECK II
CP101
CN101
CN102
CN103
CN104
CN105
CN106
CN107
CN300
CN301
CN302
CN303
IC100
IC101
IC103
IC104
IC105
IC106
IC300
IC301
IC302
IC303
IC304
IC305
IC306
IC307
IC308
IC309
IC310
X300
T100
TP300
TP301
TP302
TP303
TP100
VR101
VR103
VR104
VR105
VR300
VR301
VR302
VR303
VR304
L200
L201
L202
L300
D108

MOTOR PCB
Component Side

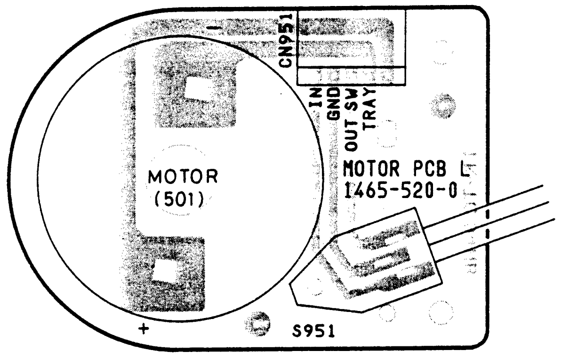



IC
Com1
A1
B1
C1
D1
VSS
VDD
TM In
A In
B In
C In
D In
Reset
Mute In
CR
RS
Input
Control
Circuit
Mut
Tim

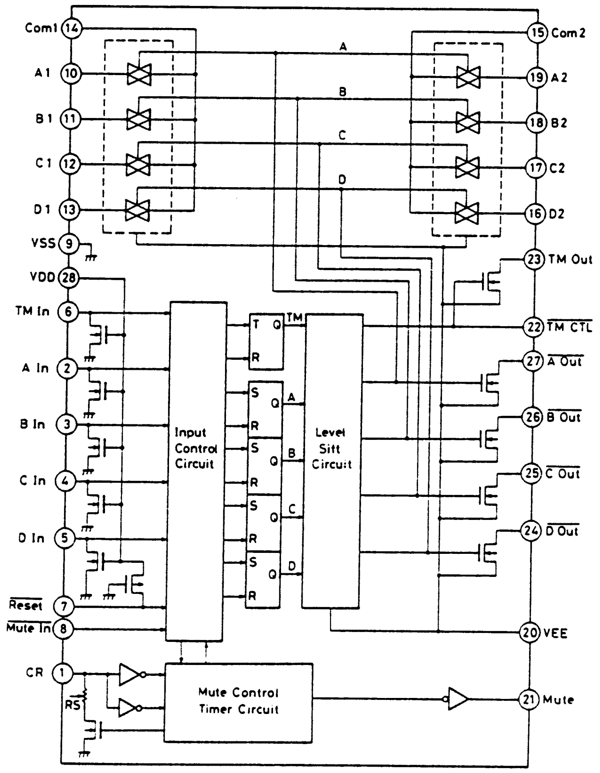



1601-500-0-91
CD DECK PCB
DECK II
DECK I
CN101
CN102
CN103
CN104
CN105
CN106
CN107
IC100
IC101
IC103
IC104
IC105
IC106
IC304
CP101
CP102
VR101
VR103
VR104
VR105
VR200
VR201
VR202
L200
L201
L202
D108
1602-500-92
REC LED PCB
HIGH SPEED OFF
DOLBY ON OFF

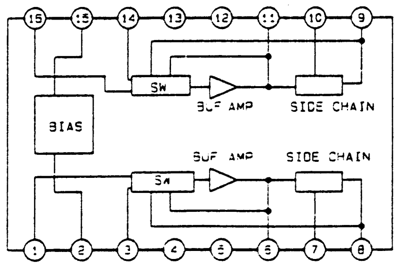
MOTOR PCB
Component Side


MOTOR
(501)
MOTOR PCB
1465-520-0
CN951
S951
IN
GND
OUT SW
TRAY
+

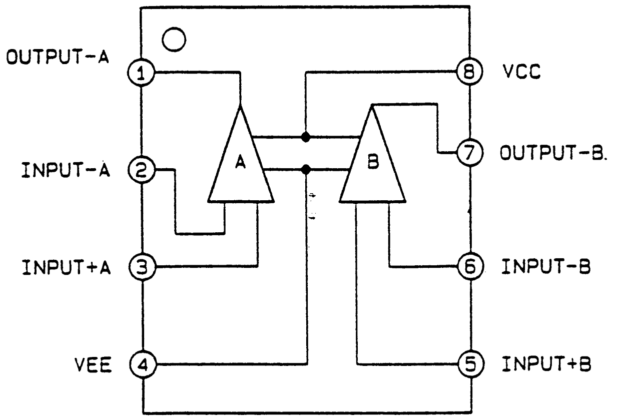
IC 100: LC7815


Com1
A1
B1
C1
D1
VSS
VDD
TM In
A In
B In
C In
D In
Reset
Mute In
CR
Com2
A2
B2
C2
D2
TM Out
TM CTL
A Out
B Out
C Out
D Out
VEE
Mute
Input Control Circuit
Level Sift Circuit
Mute Control Timer Circuit

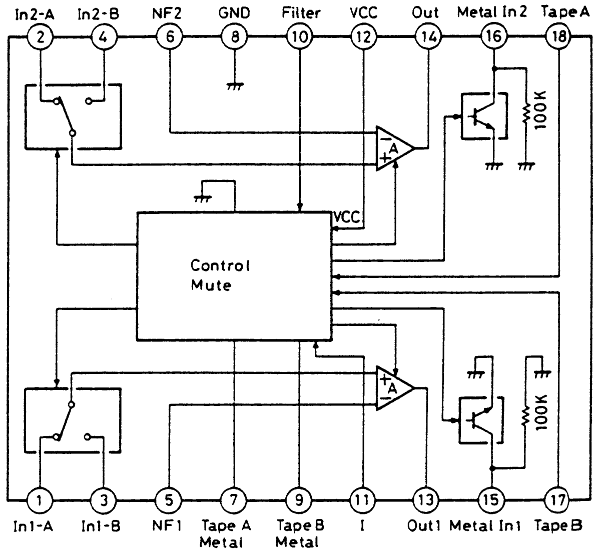
IC 104: HA12134A


BIAS
SW
BUF AMP
SIDE CHAIN

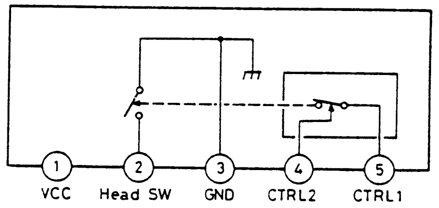
IC 101, IC 604, IC 701, NJM N 558 L


OUTPUT-A
INPUT-A
INPUT+A
VEE
VCC
OUTPUT-B.
INPUT-B
INPUT+B
A
B

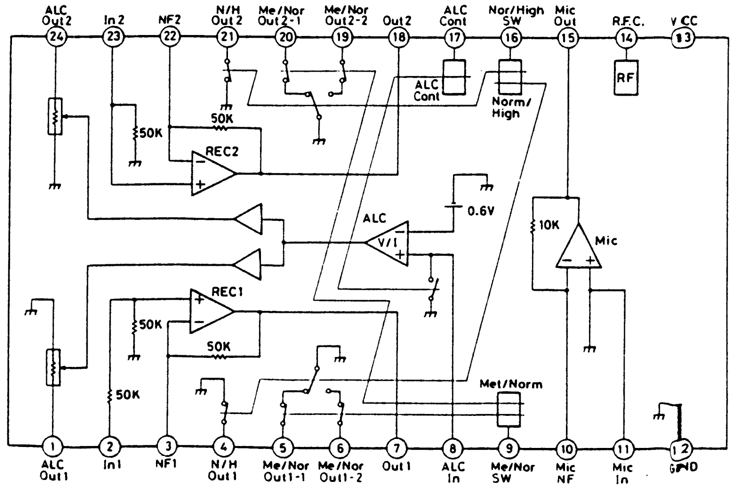
IC 103: BA3416BL


In2-A
In2-B
NF2
GND
Filter
VCC
Out
Metal In2
Tape A
Control
Mute
100K
In1-A
In1-B
NF1
Tape A Metal
Tape B Metal
I
Out1
Metal In1
Tape B

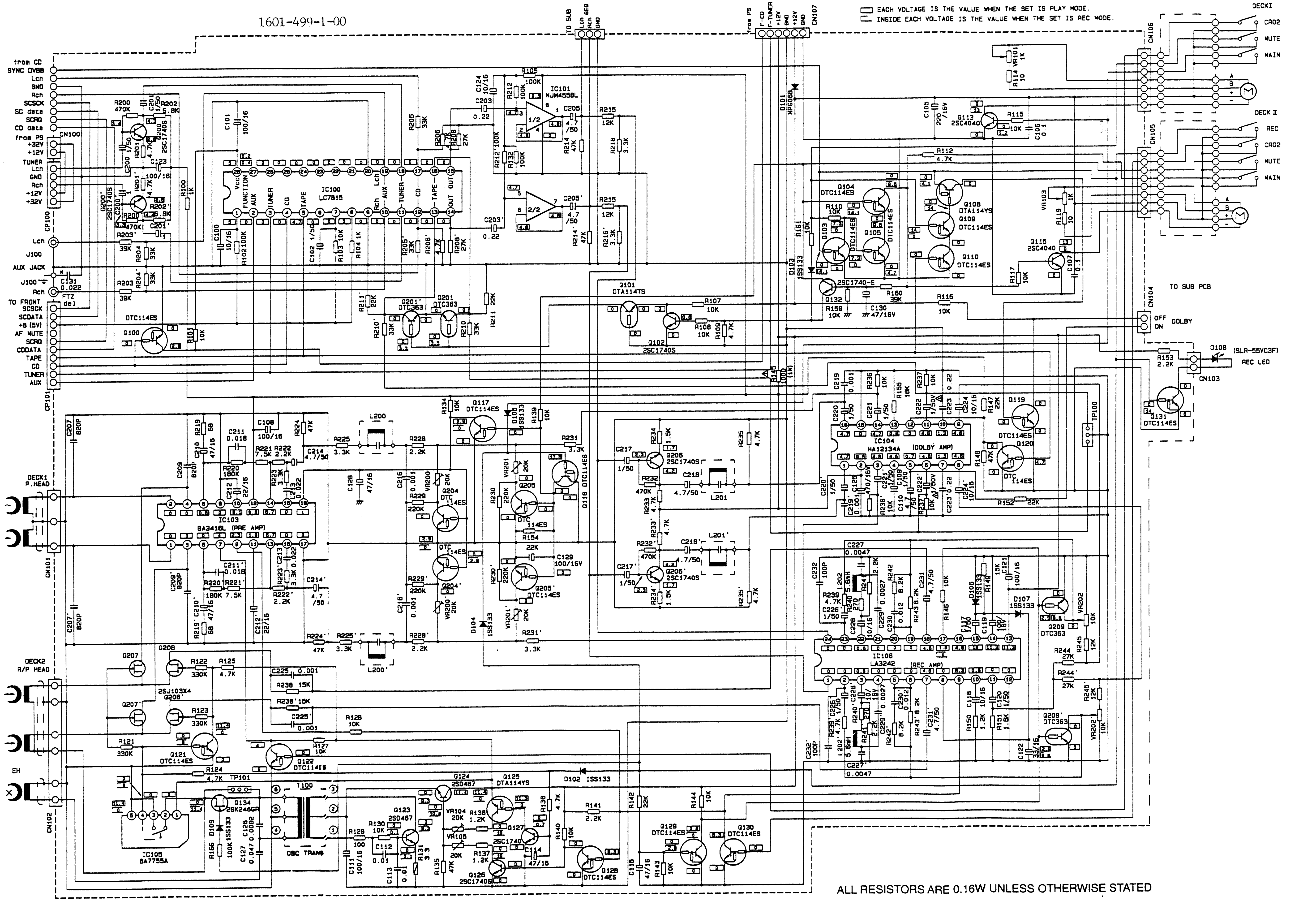
IC 105: BA7755A


VCC
Head SW
GND
CTRL2
CTRL1

IC 106: LA3242


ALC Out2
In2
NF2
N/H Out2
Me/Nor Out2-1
Me/Nor Out2-2
Out2
ALC Cont
Nor/High SW
Mic Out
R.F.C.
VCC
RF
REC2
REC1
ALC
V/I
0.6V
10K
Mic
50K
Norm/High
Met/Norm
ALC Out1
In1
NF1
N/H Out1
Me/Nor Out1-1
Me/Nor Out1-2
Out1
ALC In
Me/Nor SW
Mic NF
Mic In
GND

TAPE DECK SCHEMATIC DIAGRAM


1601-499-1-00
TO SUB
Lch
Rch
GND
from PS
F-CD
F-TUNER
+12V
GND
+12V
GND
CN107
DECKI
CRO2
MUTE
MAIN
DECK II
REC
CRO2
MUTE
MAIN
CN106
CN105
CN104
OFF
ON
DOLBY
TO SUB PCB
CN103
D108 (SLR-55VC3F)
REC LED
from CD
SYNC DVBB
Lch
GND
Rch
SCSCK
SC data
SCRQ
CD data
from PS
+32V
+12V
TUNER
Lch
GND
Rch
+12V
+32V
CN100
CP100
Lch
J100
AUX JACK
J100'
Rch
TO FRONT
SCSCK
SCDATA
+B (5V)
AF MUTE
SCRQ
CDDATA
TAPE
CD
TUNER
AUX
CP101
IC100
LC7815
IC101
NJM4558L
IC103
BA3416L (PRE AMP)
IC104
HA12134A (DOLBY AMP)
IC105
BA7755A
IC106
LA3242 (REC AMP)
DECK1
P.HEAD
CN101
DECK2
R/P HEAD
EH
CN102
OSC TRANS
T100
TP100
TP101
L200
L200'
L201
L201'
Q100 DTC114ES
Q101 DTA114TS
Q102 2SC1740S
Q103 DTC114ES
Q104 DTC114ES
Q105 DTC114ES
Q108 DTA114YS
Q109 DTC114ES
Q110 DTC114ES
Q113 2SC4040
Q115 2SC4040
Q117 DTC114ES
Q118 DTC114ES
Q119 DTC114ES
Q120 DTC114ES
Q121 DTC114ES
Q122 DTC114ES
Q123 2SD467
Q124 2SD467
Q125 DTA114YS
Q126 2SC1740S
Q127 2SC1740
Q128 DTC114ES
Q129 DTC114ES
Q130 DTC114ES
Q131 DTC114ES
Q132 2SC1740-S
Q134 2SK246GR
Q200 2SC1740S
Q201 DTC363
Q204 DTC114ES
Q205 DTC114ES
Q206 2SC1740S
Q207
Q208 2SJ103X4
Q209 DTC363
D101 MPG06B
D102 1SS133
D103 1SS133
D104 1SS133
D105 1SS133
D106 1SS133
D107 1SS133
D109 1SS133
VR101 1K
VR103 1K
VR104 20K
VR105 20K
VR200 20K
VR201 20K
VR202 10K
R145 100Ω (1W)

□ EACH VOLTAGE IS THE VALUE WHEN THE SET IS PLAY MODE.
▭ INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS REC MODE.

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE STATED

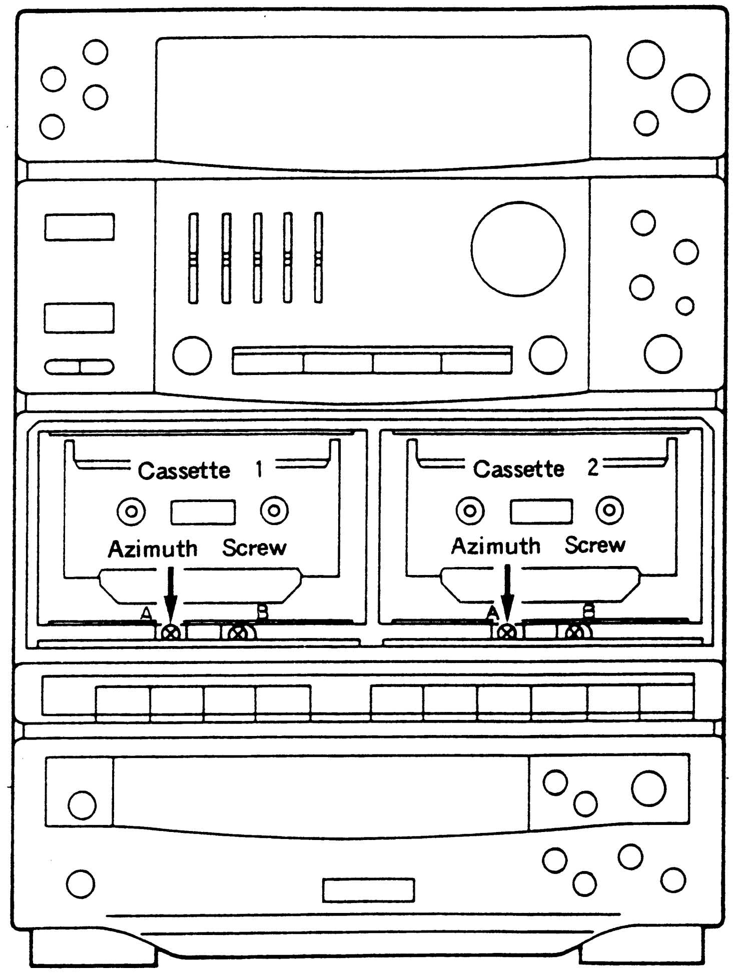


Figure 1

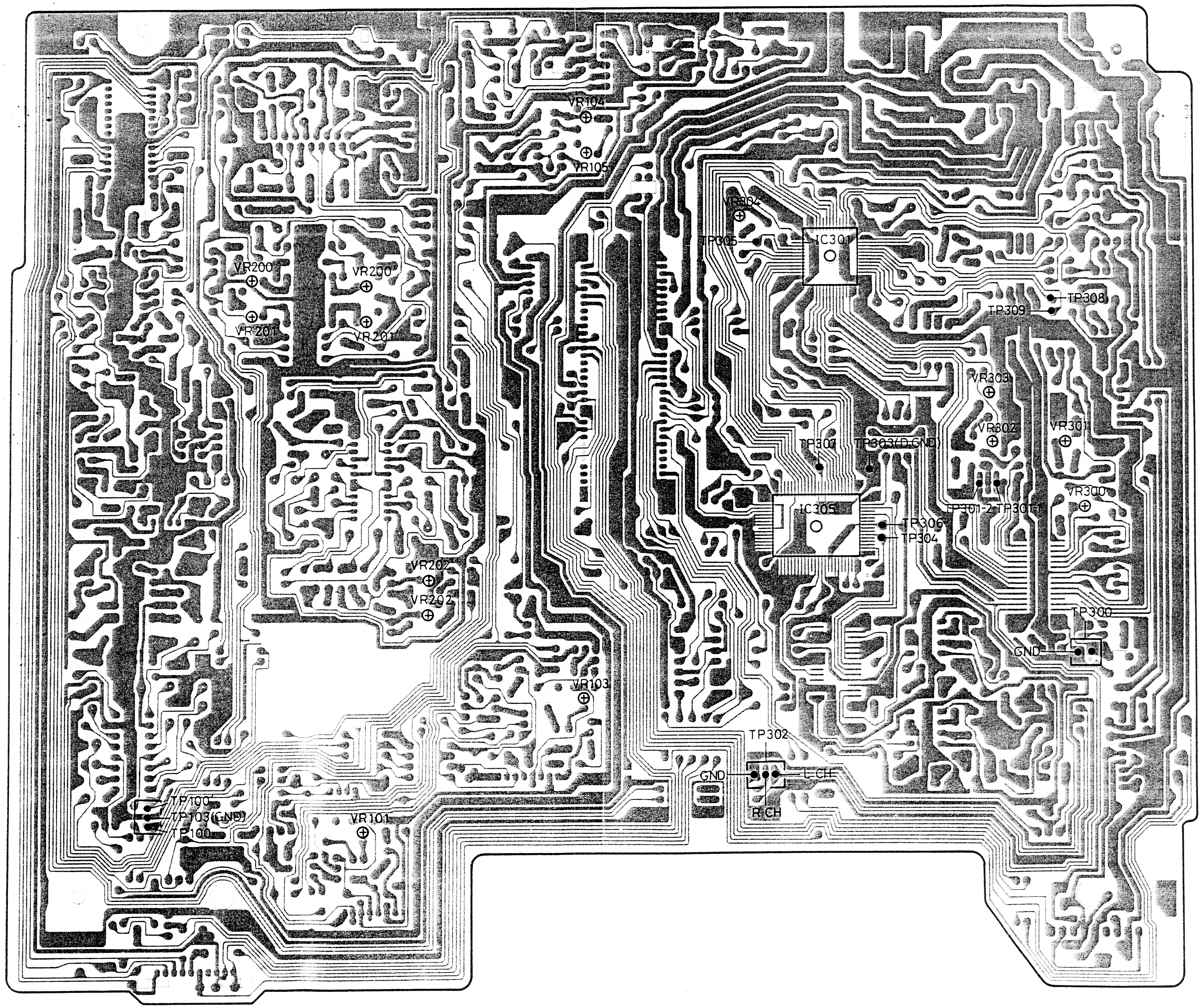
ADJUSTMENT	CASSETTE	SK...	TAPE DECK POSITION	READ ON	ADJUST WITH	ADJUST TO
Azimuth	8kHz SBC 420*	Tape	Play fwd	mV-meter *1	Screw A	Max. L = R
			Play rev	mV-meter *1	Screw B	
Motor speed (normal)	3150Hz SBC 420*	Tape	Play fwds	Wow and Flutter meter *1	VR101 (VR103)	**a

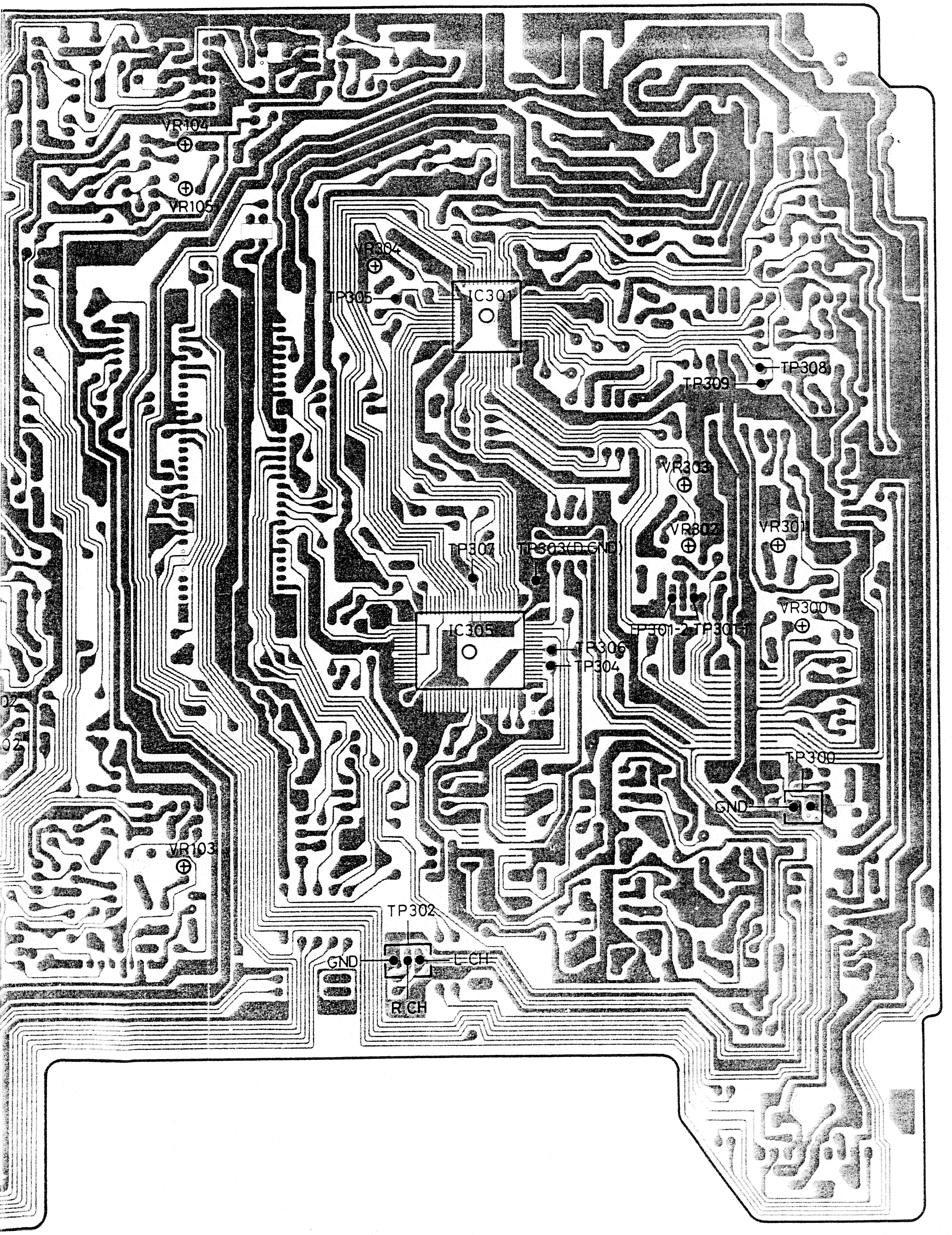
*	SBC 420 : 4822 397 30071
**a	The maximum permissible speed deviation is 2%. Moreover, the wow and flutter value can be read. This value should not exceed 0.35%.
*1	Connected across the speaker terminals
(...)	For Tape deck 2 only

ADJUSTMENT	CASSETTE	INPUT	SK..	ADJUST WITH	READ ON	ADJUST TO
Dolby level	315Hz SBC 420*		Tape Deck1 Play Dolby off	VR200 (VR200')	mV-meter *	300mV
			Tape Deck 2 Play Dolby off	VR201 (VR201')	mV-meter *	300mV
Rec/Playback level	Blank tape (Normal)	400Hz 100mV *1	Tape Record Dolby off			
			Playback	VR202 (VR202')	mV-meter *	100mV
Rec/Playback frequency	Blank tape (Normal)	10kHz 32mV *1	Tape record Dolby off			
			Playback	VR105	mV-meter * Oscilloscope	0 ± 2 dB
	Blank tape (chrome)	10kHz 32mV *1	Tape Record Dolby off			
			Playback	VR104	mV-meter * Oscilloscope	0 ± 2 dB

* Across TP100 (L ch), TP100' (R ch) and TP103 (GND)
(...) For Right channel only
*1 To line input jack (dummy load 600Ω)

TEST, CD TEST POINTS


VR104
VR105
VR304
TP305
IC301
TP308
TP309
VR200
VR200'
VR201
VR201'
VR303
VR302
VR301
TP307
TP303(D.GND)
TP301-2
TP301-1
VR300
IC305
TP306
TP304
VR202
VR202'
TP300
GND
VR103
TP302
GND
L CH
R CH
TP100'
TP103(GND)
TP100
VR101


VR104
VR105
VR304
TP305
IC301
TP308
TP309
VR303
VR302
VR301
TP307
TP303(D.GND)
VR300
TP301-2
TP301
IC305
TP306
TP304
TP300
GND
VR103
TP302
GND
L CH
R CH

CD part	Measure across	Adjust with	Scope/counter	Remarks
PLL free-run frequency				
Stop	TP304 & TP303	VR304	4.3MHz	Short TP305 & TP306 via 10k. Short TP307 & TP303 via wire. Remove after adj.
Focus offset				
Play with test disc 5	TP 300	VR301	Eye pattern ≤ 200mV	
E-F Balance				
Play with test disc 5	TP303-2 & TP303	VR300	see Fig.1 Adjust for A = B	Set VR303 full anti-clockwise
Focus Gain				
Play with test disc 5	TP308 & TP303	VR302	see fig.2 Adjust for 1.5Vp-p	
Tracking Gain				
Play with test disc 5	TP309 & TP303	VR303	see Fig.3 Adjust for 1Vp-p	

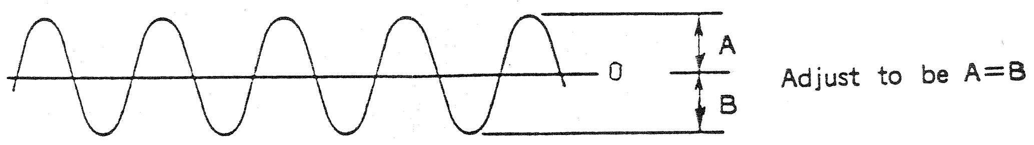

0
A
B
Adjust to be A=B

Figure 1

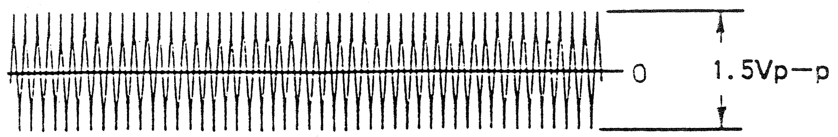


Figure 2

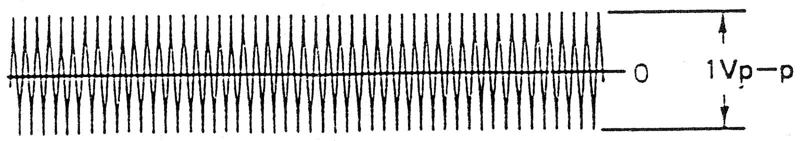
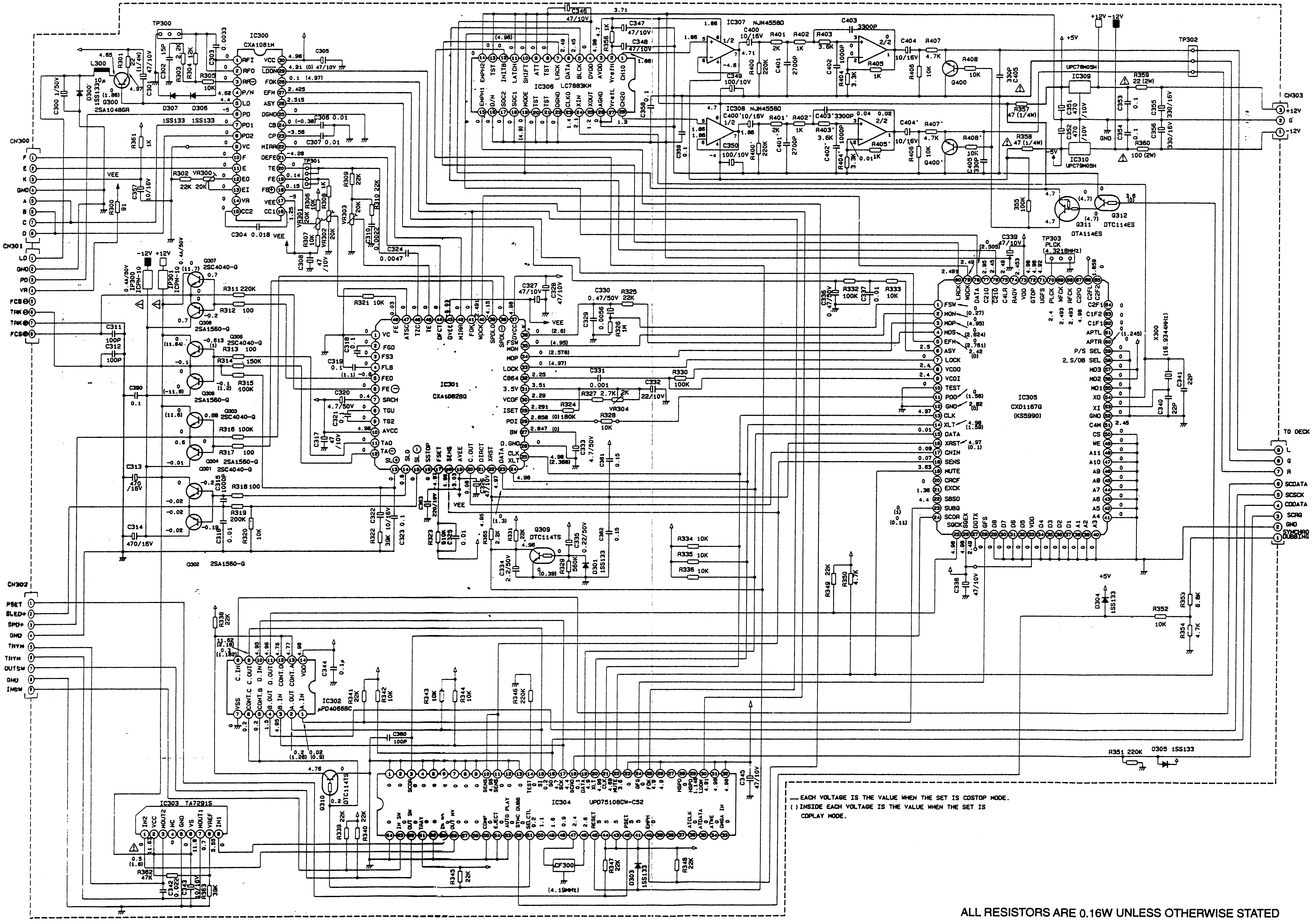


Figure 3

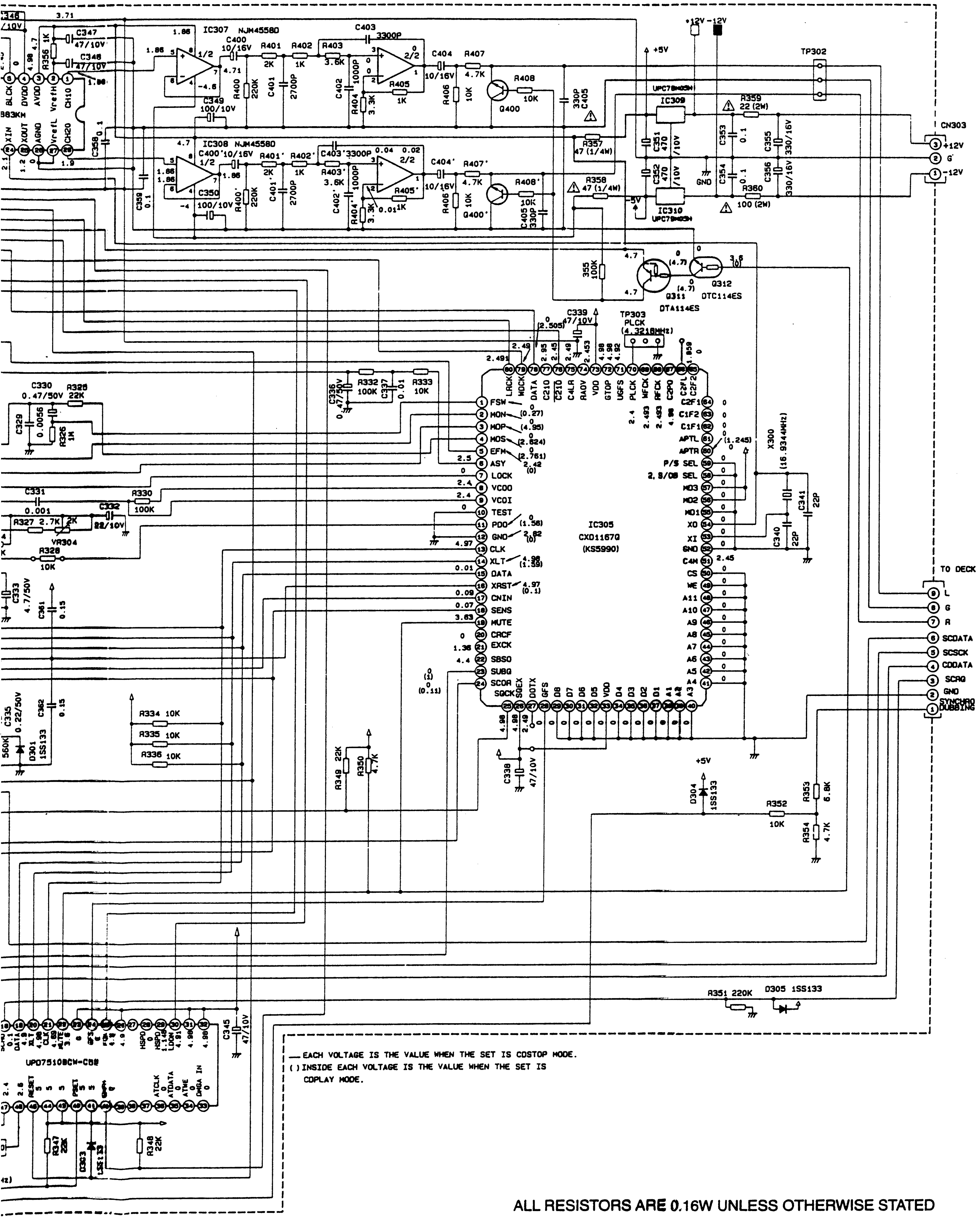
CD SCHEMATIC DIAGRAM


IC300 CXA1081M
IC301 CXA1082BQ
IC302 μPD4066BC
IC303 TA7291S
IC304 UPD75108CW-C52
IC305 CXD1167Q (KS5990)
IC306 LC7883KM
IC307 NJM4558D
IC308 NJM4558D
IC309 UPC78M05H
IC310 UPC79M05H
CN300
CN301
CN302
CN303
TP300
TP301
TP302
TP303
X300 (16.9344MHz)
CF300 (4.19MHz)
TO DECK

— EACH VOLTAGE IS THE VALUE WHEN THE SET IS CDSTOP MODE.
( ) INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS CDPLAY MODE.

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE STATED

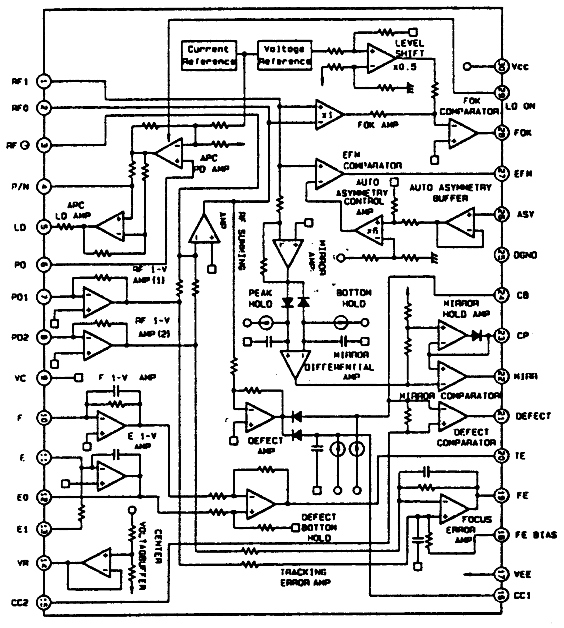
BASIC INTERVAL TIMER
TIMER/EVENT COUNTER
TIMER/PULSE GENERATOR
SERIAL INTERFACE
INTERRUPT CONTROL


IC307 NJM4558D
IC308 NJM4558D
IC309 UPC78M05H
IC310 UPC79M05H
IC305 CXD1167Q (KS5990)
UPD75108CW-C58
Q311 DTA114ES
Q312 DTC114ES
Q400
Q400'
TP302
TP303 PLCK (4.3218MHz)
X300 (16.9344MHz)
CN303
+12V
G'
-12V
+5V
-5V
TO DECK
L
G
R
SCDATA
SCSCK
CDDATA
SCRQ
GND
SYNCHRO DUBBING
R351 220K
D305 1SS133
D304 1SS133
D301 1SS133
VR304
FSW
MON
MDP
MDS
EFM
ASY
LOCK
VCOO
VCOI
TEST
PDO
GND
CLK
XLT
DATA
XRST
CNIN
SENS
MUTE
CRCF
EXCK
SBSO
SUBQ
SCOR
SQCK
C2F1
C2F2
APTL
APTR
P/S SEL
S/M SEL
MD3
MD2
MD1
XO
XI
GND
C4M
CS
WE
A11
A10
A9
A8
A7
A6
A5
A4

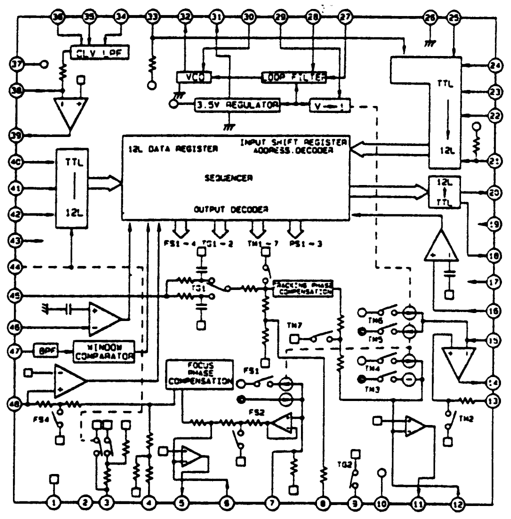
— EACH VOLTAGE IS THE VALUE WHEN THE SET IS CDSTOP MODE.
( ) INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS CDPLAY MODE.

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE STATED

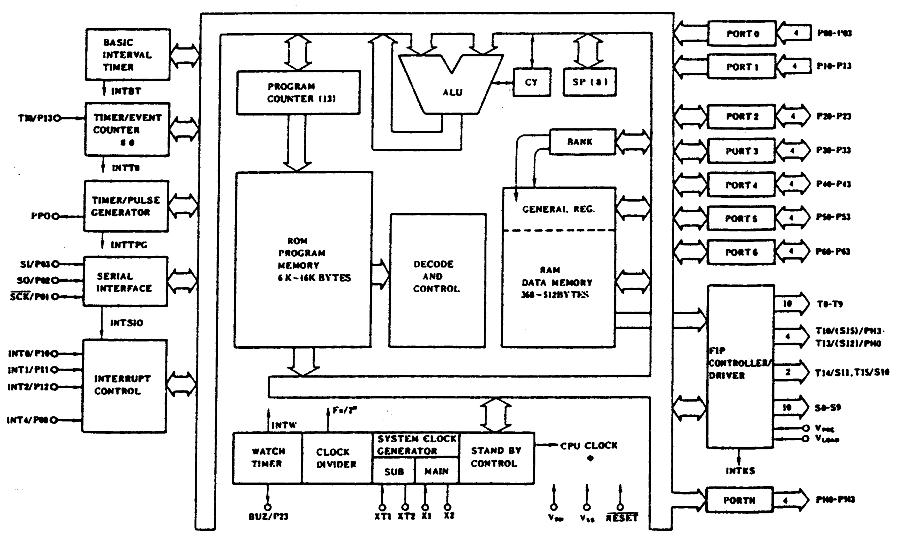
IC 300: CXA1081M


Current Reference
Voltage Reference
LEVEL SHIFT
FOK COMPARATOR
FOK AMP
EFM COMPARATOR
AUTO ASYMMETRY CONTROL AMP
AUTO ASYMMETRY BUFFER
APC PD AMP
APC LD AMP
RF I-V AMP (1)
RF I-V AMP (2)
F I-V AMP
E I-V AMP
PEAK HOLD
BOTTOM HOLD
MIRROR HOLD AMP
MIRROR DIFFERENTIAL AMP
MIRROR COMPARATOR
DEFECT AMP
DEFECT COMPARATOR
DEFECT BOTTOM HOLD
FOCUS ERROR AMP
TRACKING ERROR AMP
CENTER VOLTAGE BUFFER
RF I
RFO
P/N
LD
PD
PD1
PD2
VC
F
E
EO
EI
VR
CC2
Vcc
LD ON
FOK
EFM
ASY
DGND
CB
CP
MIRR
DEFECT
TE
FE
FE BIAS
VEE
CC1

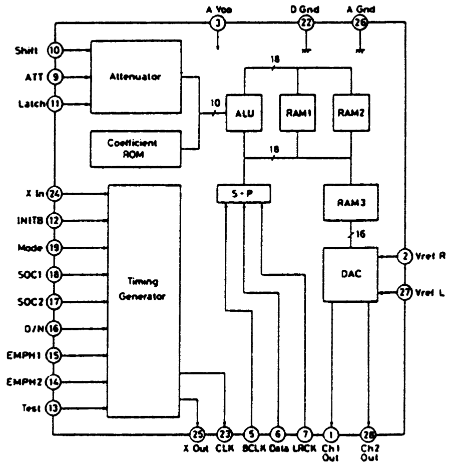
IC 301: CXA1082BQ


CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
TTL
I2L
I2L DATA REGISTER
INPUT SHIFT REGISTER ADDRESS DECODER
SEQUENCER
OUTPUT DECODER
BPF
WINDOW COMPARATOR
FOCUS PHASE COMPENSATION
TRACKING PHASE COMPENSATION
FS1
FS2
FS3
FS4
TG1
TG2
TM1
TM2
TM3
TM4
TM5
TM6
TM7

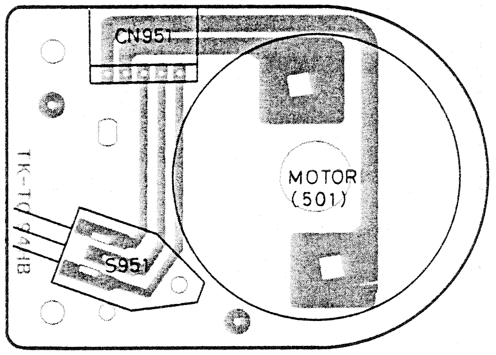
IC 304: UPD75108CW-52


BASIC INTERVAL TIMER
INTBT
TI0/P13
TIMER/EVENT COUNTER #0
INTT0
PTO0
TIMER/PULSE GENERATOR
INTTPG
SI/P03
SO/P02
SCK/P01
SERIAL INTERFACE
INTSIO
INT0/P10
INT1/P11
INT2/P12
INT4/P00
INTERRUPT CONTROL
PROGRAM COUNTER (13)
ALU
CY
SP (8)
BANK
GENERAL REG.
ROM PROGRAM MEMORY 6K-16K BYTES
DECODE AND CONTROL
RAM DATA MEMORY
INTW
WATCH TIMER
CLOCK DIVIDER
SYSTEM CLOCK GENERATOR
SUB
MAIN
STAND BY CONTROL
CPU CLOCK
BUZ/P23
XT1
XT2
X1
X2
RESET
PORT0
PORT1
PORT2
PORT3
PORT4
PORT5
PORT6
FIP CONTROLLER/DRIVER
INTKS
PORTH
T0-T9
S0-S9

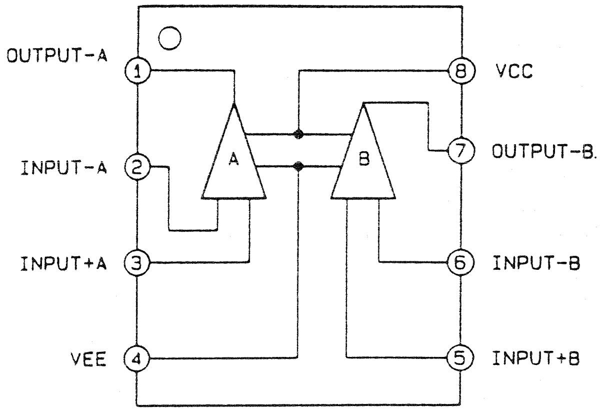
IC 306: LC7883KM


A Vdd
D Gnd
A Gnd
Shift
ATT
Latch
Attenuator
Coefficient ROM
ALU
RAM1
RAM2
S-P
RAM3
DAC
X In
INITB
Mode
SOC1
SOC2
D/M
EMPH1
EMPH2
Test
Timing Generator
Vref R
Vref L
X Out
CLK
BCLK
Data
LRCK
Ch1 Out
Ch2 Out

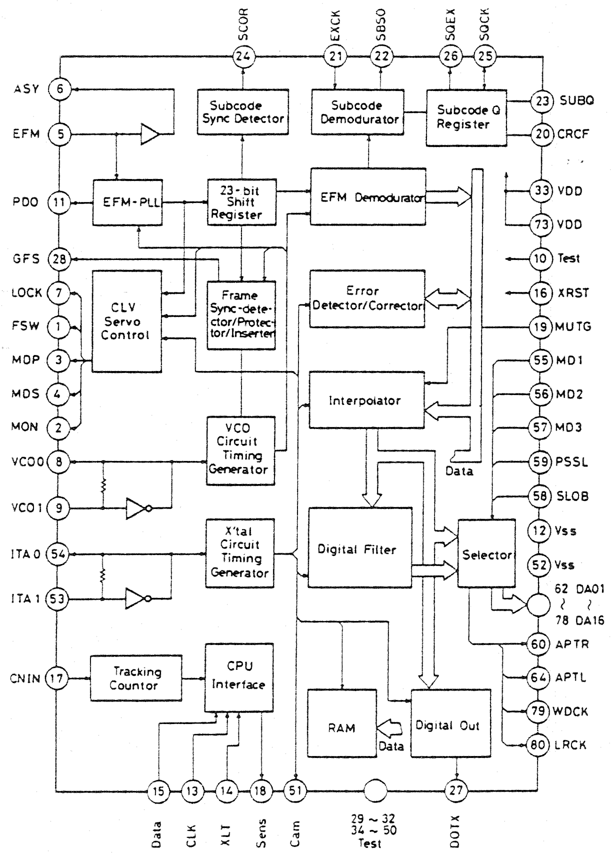
MOTOR PCB
Track Side


CN951
MOTOR
(501)
S951
TK-1C/1/1B

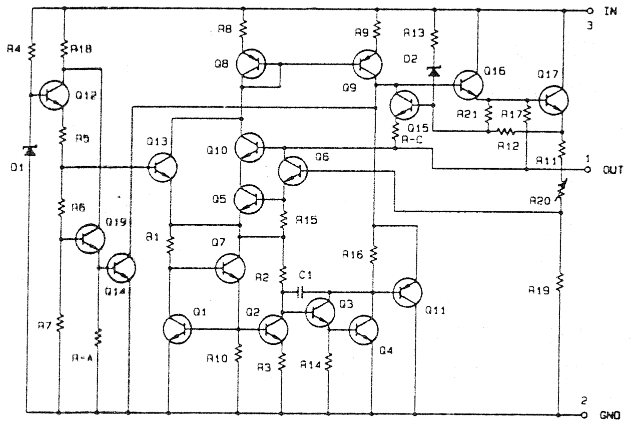
IC 307, IC 308, IC 606, IC 608: NJM4558D


OUTPUT-A 1
INPUT-A 2
INPUT+A 3
VEE 4
8 VCC
7 OUTPUT-B.
6 INPUT-B
5 INPUT+B
A
B

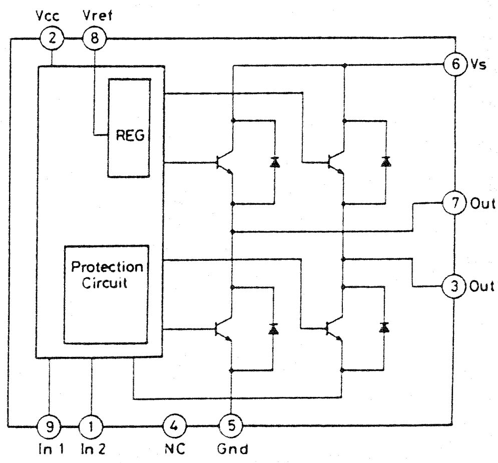
IC 305: CXD1167Q


SCOR 24
EXCK 21
SBSO 22
SQEX 26
SQCK 25
ASY 6
EFM 5
PDO 11
GFS 28
LOCK 7
FSW 1
MDP 3
MDS 4
MON 2
VCOO 8
VCOI 9
ITA0 54
ITA1 53
CNIN 17
Subcode Sync Detector
Subcode Demodurator
Subcode Q Register
EFM-PLL
23-bit Shift Register
EFM Demodurator
CLV Servo Control
Frame Sync-detector/Protector/Inserter
Error Detector/Corrector
Interpolator
VCO Circuit Timing Generator
X'tal Circuit Timing Generator
Digital Filter
Selector
Data
Tracking Counter
CPU Interface
RAM
Data
Digital Out
23 SUBQ
20 CRCF
33 VDD
73 VDD
10 Test
16 XRST
19 MUTG
55 MD1
56 MD2
57 MD3
59 PSSL
58 SLOB
12 Vss
52 Vss
62 DA01 ~ 78 DA16
60 APTR
64 APTL
79 WDCK
80 LRCK
15 Data
13 CLK
14 XLT
18 Sens
51 Cam
29 ~ 32 34 ~ 50 Test
27 DOTX

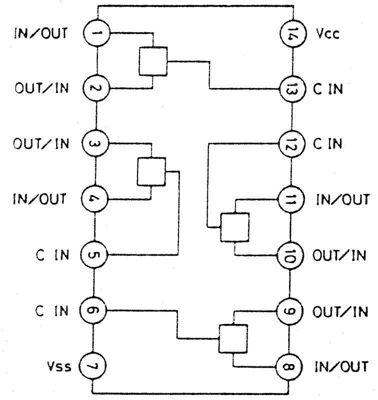
IC 309, IC310: UPC79M05H


IN 3
1 OUT
2 GND
R4
R18
Q12
D1
R5
R6
Q19
R7
R-A
Q14
R1
Q13
R8
Q8
Q10
Q5
Q7
Q1
R10
Q2
R3
R2
C1
Q3
R14
Q4
Q6
R15
R16
Q11
R9
Q9
R13
D2
Q16
Q17
Q15
R-C
R21
R17
R12
R11
R20
R19

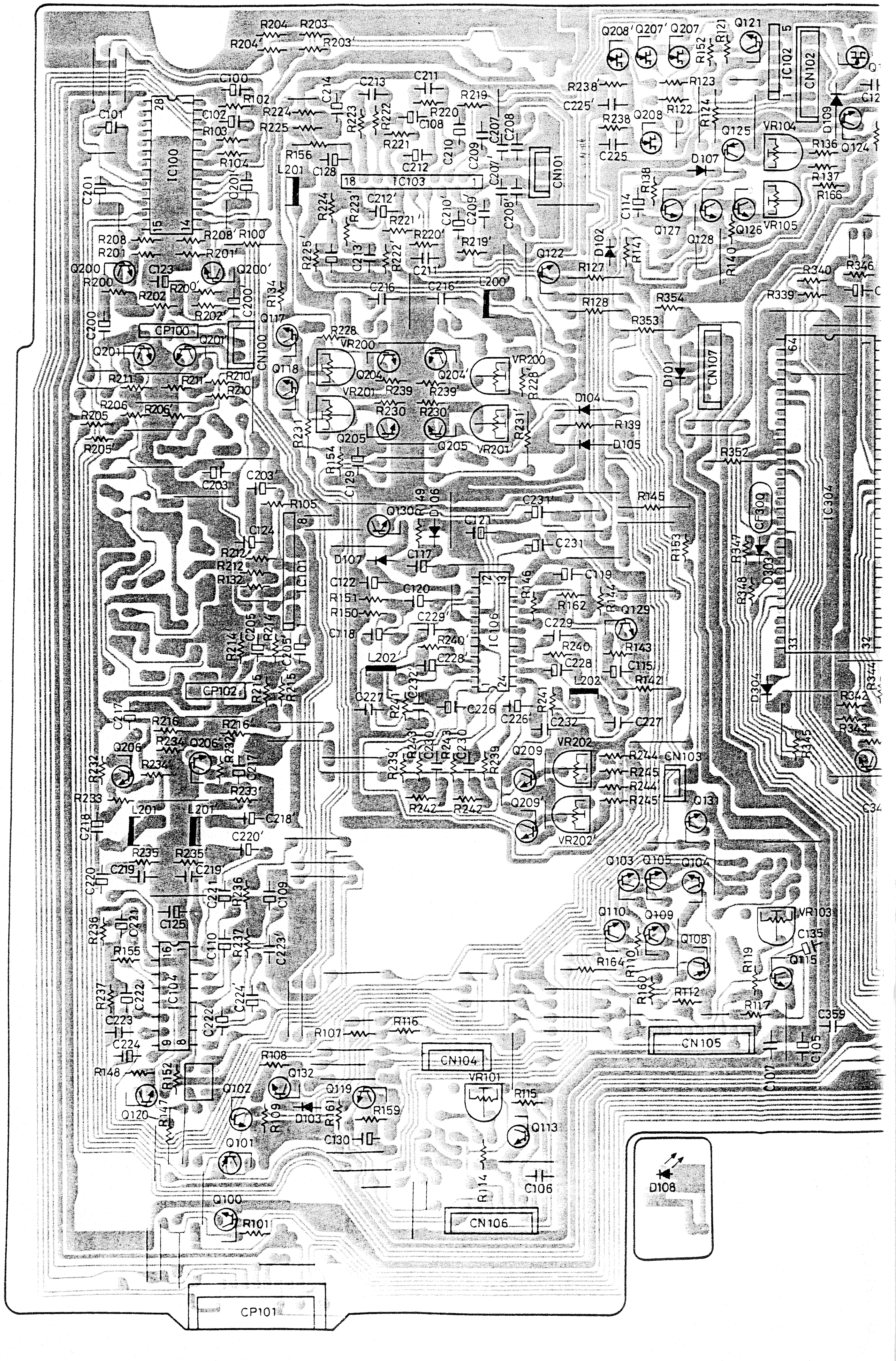
IC 303, IC 603: TA7291S


Vcc 2
Vref 8
6 Vs
REG
7 Out1
3 Out2
Protection Circuit
9 In 1
1 In 2
4 NC
5 Gnd

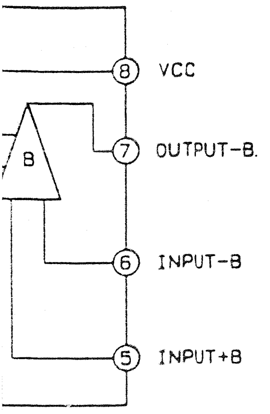
IC 302: UPD4066BC OR TC4066BP


IN/OUT 1
OUT/IN 2
OUT/IN 3
IN/OUT 4
C IN 5
C IN 6
Vss 7
14 Vcc
13 C IN
12 C IN
11 IN/OUT
10 OUT/IN
9 OUT/IN
8 IN/OUT

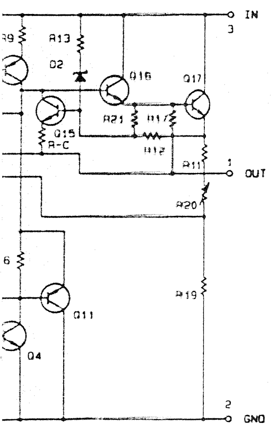
DECK/CD PCB (Track Side)


IC100
IC103
IC104
IC106
IC304
CN100
CN101
CN102
CN103
CN104
CN105
CN106
CN107
CP100
CP101
CP102
VR101
VR104
VR105
VR200
VR201
VR202
D108

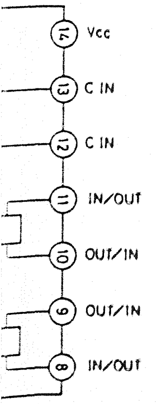
608: NJM4558D


8 VCC
7 OUTPUT-B.
6 INPUT-B
5 INPUT+B
B

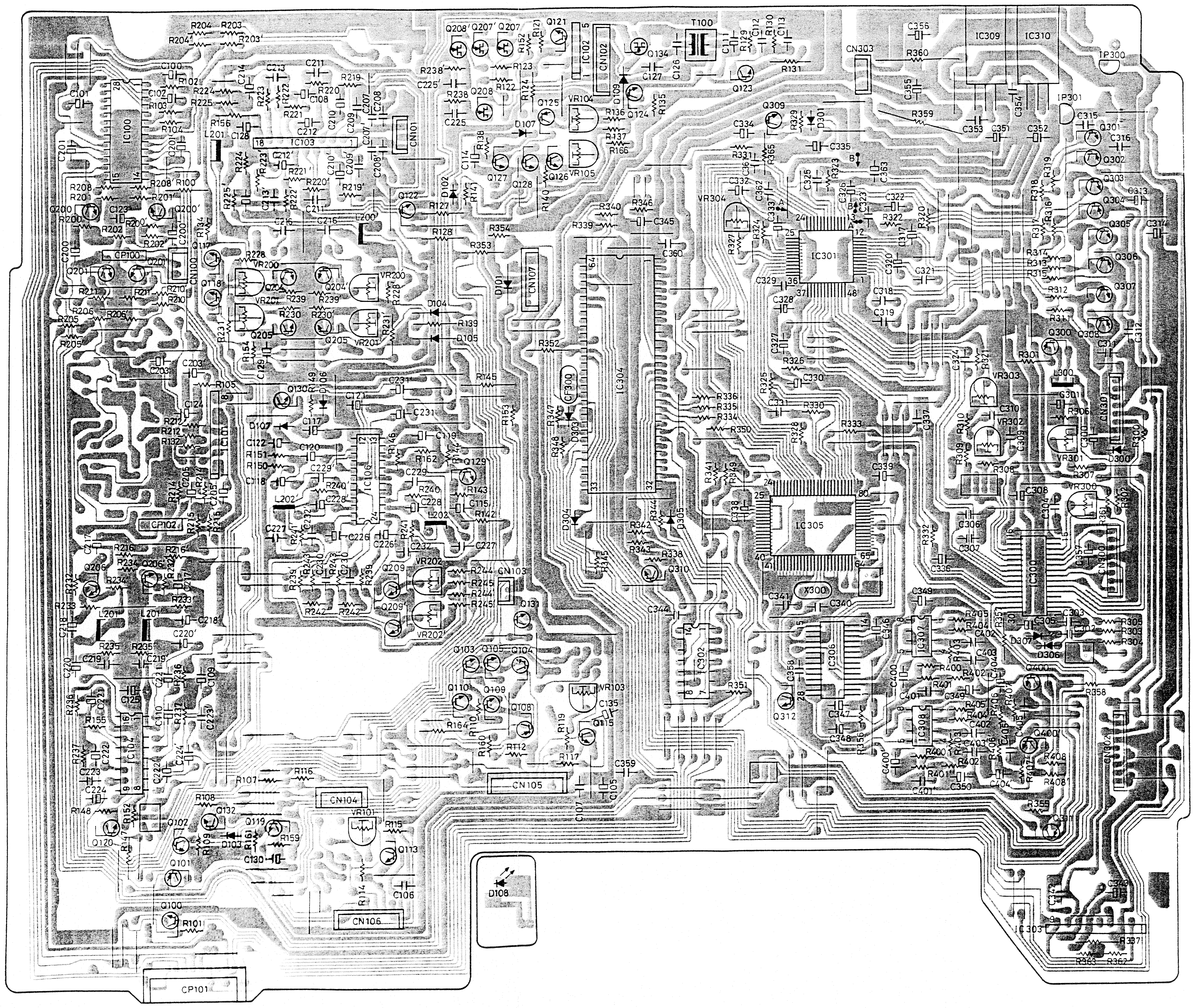
79M05H


IN
3
R13
D2
Q16
Q17
R21
Q15
R11
OUT
1
R20
Q11
R19
Q4
2
GND

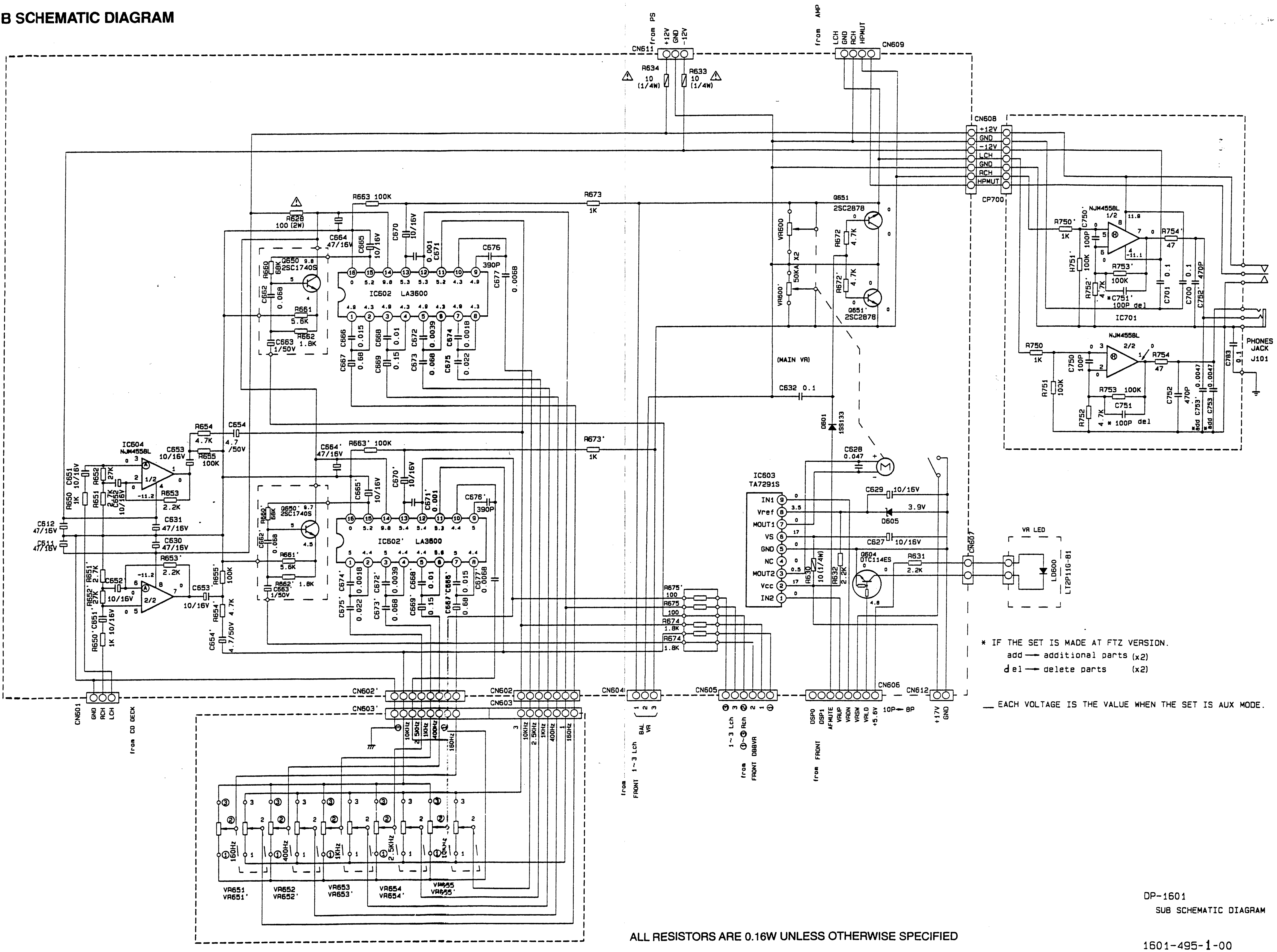
OR TC4066BP


14 Vcc
13 C IN
12 C IN
11 IN/OUT
10 OUT/IN
9 OUT/IN
8 IN/OUT

DECK/CD PCB (Track Side)


IC100
IC101
IC102
IC103
IC104
IC301
IC302
IC303
IC304
IC305
IC306
IC307
IC308
IC309
IC310
CN101
CN102
CN103
CN104
CN105
CN106
CN107
CN300
CN301
CN302
CN303
CP100
CP101
CP102
T100
X300
IP300
IP301
VR101
VR103
VR104
VR105
VR200
VR201
VR202
VR300
VR301
VR302
VR303
VR304
L200
L201
L202
L300
D108
B

SUB SCHEMATIC DIAGRAM



from PS
+12V
GND
-12V
CN611
R634 10 (1/4W)
R633 10 (1/4W)
from AMP
LCH
GND
RCH
HPMUT
CN609
CN608
+12V
GND
-12V
LCH
GND
RCH
HPMUT
CP700
R663 100K
R673 1K
R628 100 (2W)
C664 47/16V
C665 10/16V
C670 10/16V
C671 0.001
C676 390P
C677 0.0068
Q650 2SC1740S
R660 68K
C662 0.068
R661 5.6K
R662 1.8K
C663 1/50V
IC602 LA3600
C666 0.015
C667 0.68
C668 0.01
C669 0.15
C672 0.0039
C673 0.068
C674 0.0018
C675 0.022
VR600
VR600'
50KA X2
(MAIN VR)
Q651 2SC2878
Q651' 2SC2878
R672 4.7K
R672' 4.7K
C632 0.1
D601 1SS133
IC701
NJM4558L
R750 1K
R750' 1K
C750 100P
C750' 100P
R751 100K
R751' 100K
R752 4.7K
R752' 4.7K
R753 100K
R753' 100K
C751 * 100P del
C751' * 100P del
R754 47
R754' 47
C700 0.1
C701 0.1
C752 470P
C752' 470P
C753 0.0047
C753' 0.0047
*add C753
*add C753'
C783 0.1
PHONES JACK
J101
IC604
NJM4558L
R650 1K
R651 2.7K
R652 27K
C651 10/16V
C612 47/16V
C611 47/16V
C652 10/16V
C653 10/16V
R653 2.2K
C630 47/16V
C631 47/16V
R654 4.7K
R655 100K
C654 4.7/50V
R663' 100K
R673' 1K
C664' 47/16V
IC602' LA3600
Q650' 2SC1740S
R675 100
R675' 100
R674 1.8K
R674' 1.8K
IC603
TA7291S
IN1
Vref
MOUT1
VS
GND
NC
MOUT2
Vcc
IN2
C628 0.047
C629 10/16V
D605 3.9V
C627 10/16V
Q604 DTC114ES
R631 2.2K
R630 10 (1/4W)
R632 2.2K
CN607
VR LED
LD500
LT2P11G-B1
CN601
GND
RCH
LCH
from CD DECK
CN602'
CN603'
CN602
CN603
10KHz
2.5KHz
1KHz
400Hz
160Hz
CN604
BAL VR
from FRONT 1~3 Lch
CN605
1~3 Lch
④~⑥ Rch
from FRONT DBBVR
CN606
DSP0
DSP1
AFMUTE
VRUP
VRDN
VRSW
VRLD
+5.6V
10P→8P
from FRONT
CN612
+17V
GND
VR651
VR651'
VR652
VR652'
VR653
VR653'
VR654
VR654'
VR655
VR655'

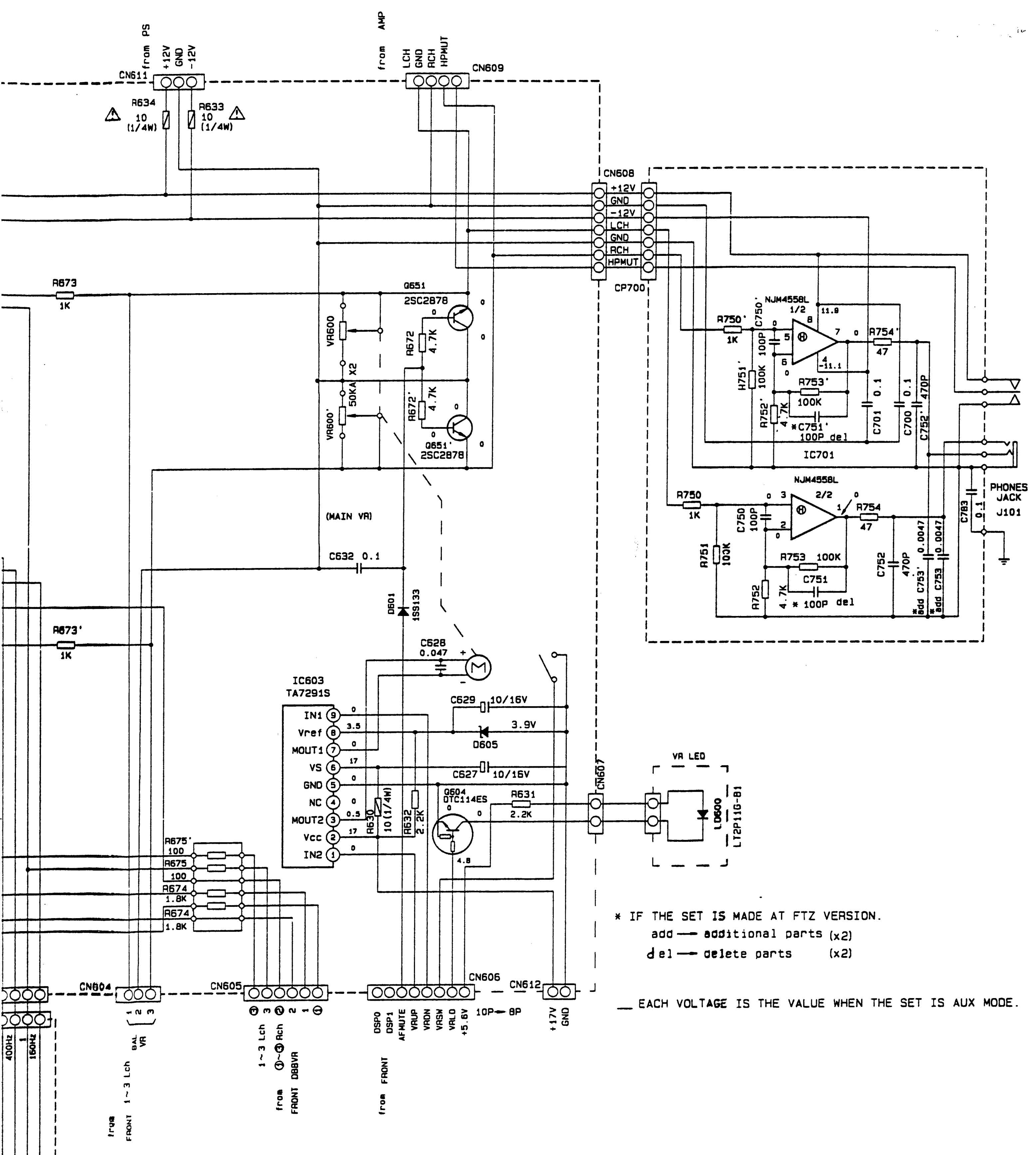
* IF THE SET IS MADE AT FTZ VERSION.
add → additional parts (x2)
del → delete parts (x2)

— EACH VOLTAGE IS THE VALUE WHEN THE SET IS AUX MODE.

ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

DP-1601
SUB SCHEMATIC DIAGRAM

1601-495-1-00


CN611
from PS
+12V
GND
-12V
R634 10 (1/4W)
R633 10 (1/4W)
from AMP
LCH
GND
RCH
HPMUT
CN609
CN608
+12V
GND
-12V
LCH
GND
RCH
HPMUT
CP700
R673 1K
Q651 2SC2878
VR600
50KA X2
VR600'
R672 4.7K
R672' 4.7K
Q651' 2SC2878
(MAIN VR)
C632 0.1
D601 1SS133
NJM4558L 1/2
R750' 1K
C750' 100P
R751' 100K
R752' 4.7K
R753' 100K
C751' 100P del
R754' 47
C701 0.1
C700 0.1
C752' 470P
IC701
NJM4558L 2/2
R750 1K
C750 100P
R751 100K
R752 4.7K
R753 100K
C751 100P del
R754 47
C752 470P
C753' 0.0047 add
C753 0.0047 add
C783 0.1
PHONES JACK J101
C628 0.047
IC603 TA7291S
IN1
Vref
MOUT1
VS
GND
NC
MOUT2
Vcc
IN2
C629 10/16V
3.9V
D605
C627 10/16V
Q604 DTC114ES
R631 2.2K
R630 10 (1/4W)
R632 2.2K
CN607
VR LED
LD600 LT2P11G-B1
R675' 100
R675 100
R674' 1.8K
R674 1.8K
R673' 1K
CN604
CN605
CN606
CN612
400Hz
160Hz
BAL VR
from FRONT 1~3 Lch
1~3 Lch
①~③ Rch
from FRONT DBBVR
DSP0
DSP1
AFMUTE
VRUP
VRDN
VRSW
VRLO
+5.6V
10P — 8P
from FRONT
+17V
GND

* IF THE SET IS MADE AT FTZ VERSION.

add — additional parts (x2)

del — delete parts (x2)

— EACH VOLTAGE IS THE VALUE WHEN THE SET IS AUX MODE.

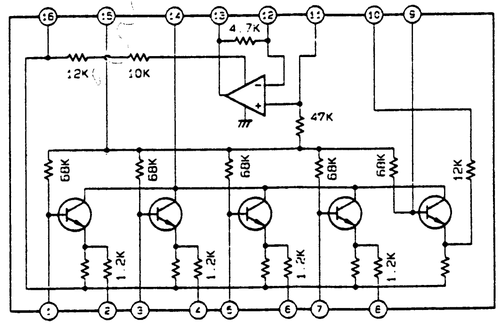
DP-1601

SUB SCHEMATIC DIAGRAM

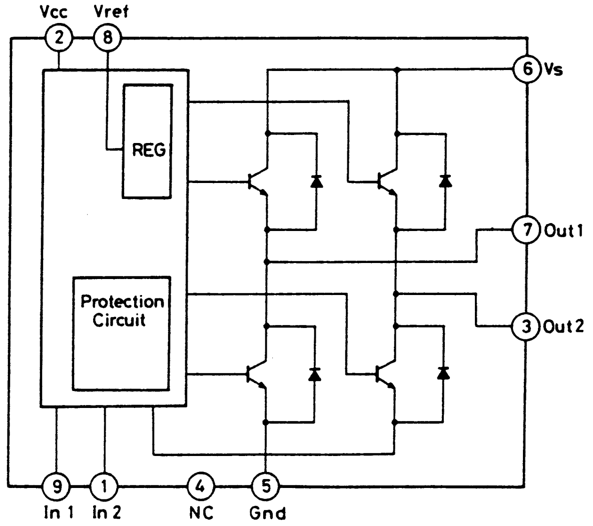
ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

1601-495-1-00

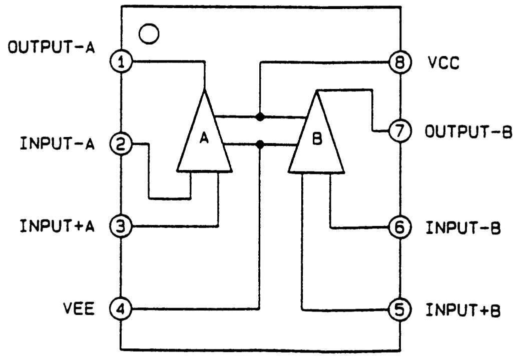
IC 602: LA3600


12K
10K
4.7K
47K
68K
1.2K

IC 303, IC 603: TA7291S

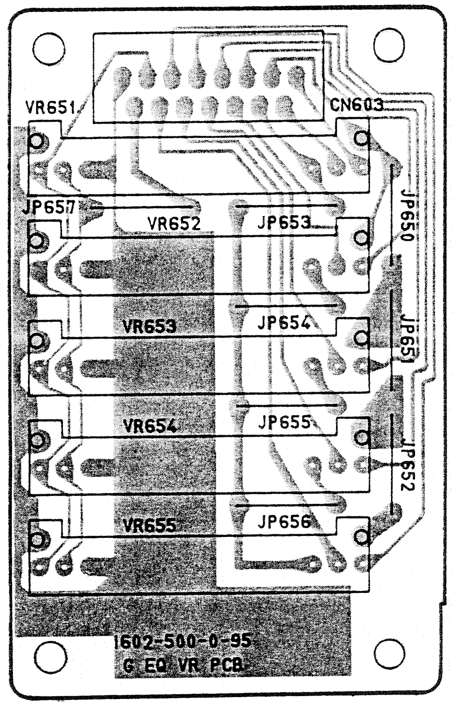

Vcc
Vref
REG
Vs
Out1
Protection Circuit
Out2
In 1
In 2
NC
Gnd

IC 101, IC 102, IC 604, IC 607, IC 700, IC 701: NJM 4558L

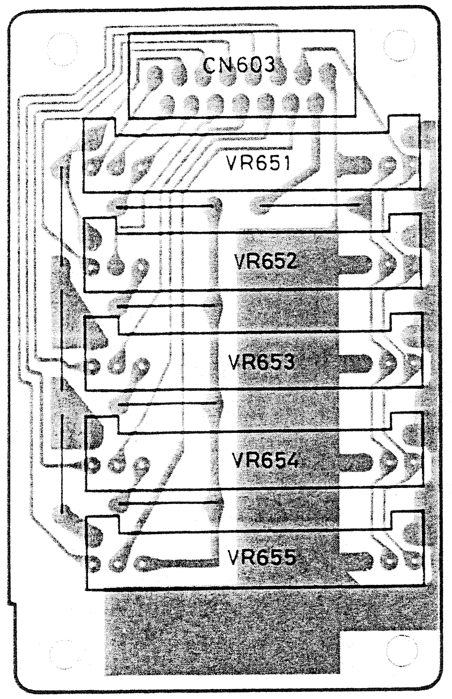

OUTPUT-A
INPUT-A
INPUT+A
VEE
VCC
OUTPUT-B
INPUT-B
INPUT+B
A
B

EQUALIZER PCB

COMPONENT SIDE

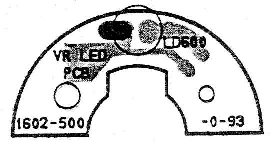

VR651
CN603
JP657
VR652
JP653
JP650
VR653
JP654
JP651
VR654
JP655
JP652
VR655
JP656
1602-500-0-95
G EQ VR PCB

TRACK SIDE

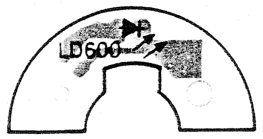

CN603
VR651
VR652
VR653
VR654
VR655

UR LED PCB

COMPONENT SIDE

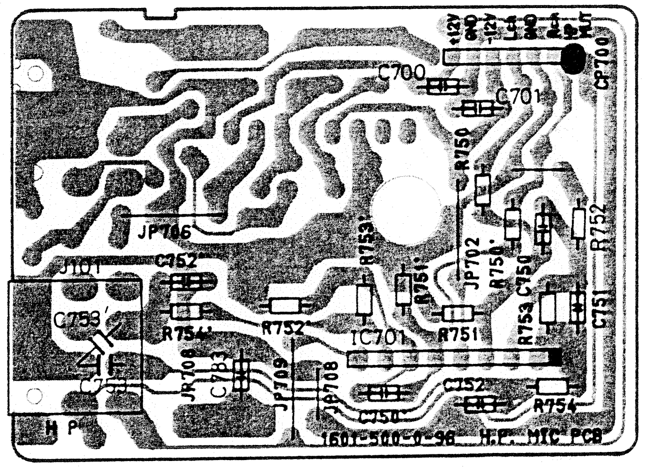

VR LED PCB
LD600
1602-500
-0-93

TRACK SIDE

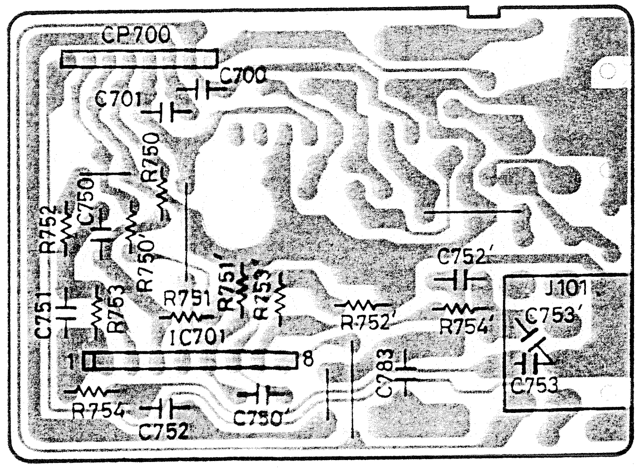


HEADPHONE PCB

COMPONENT SIDE

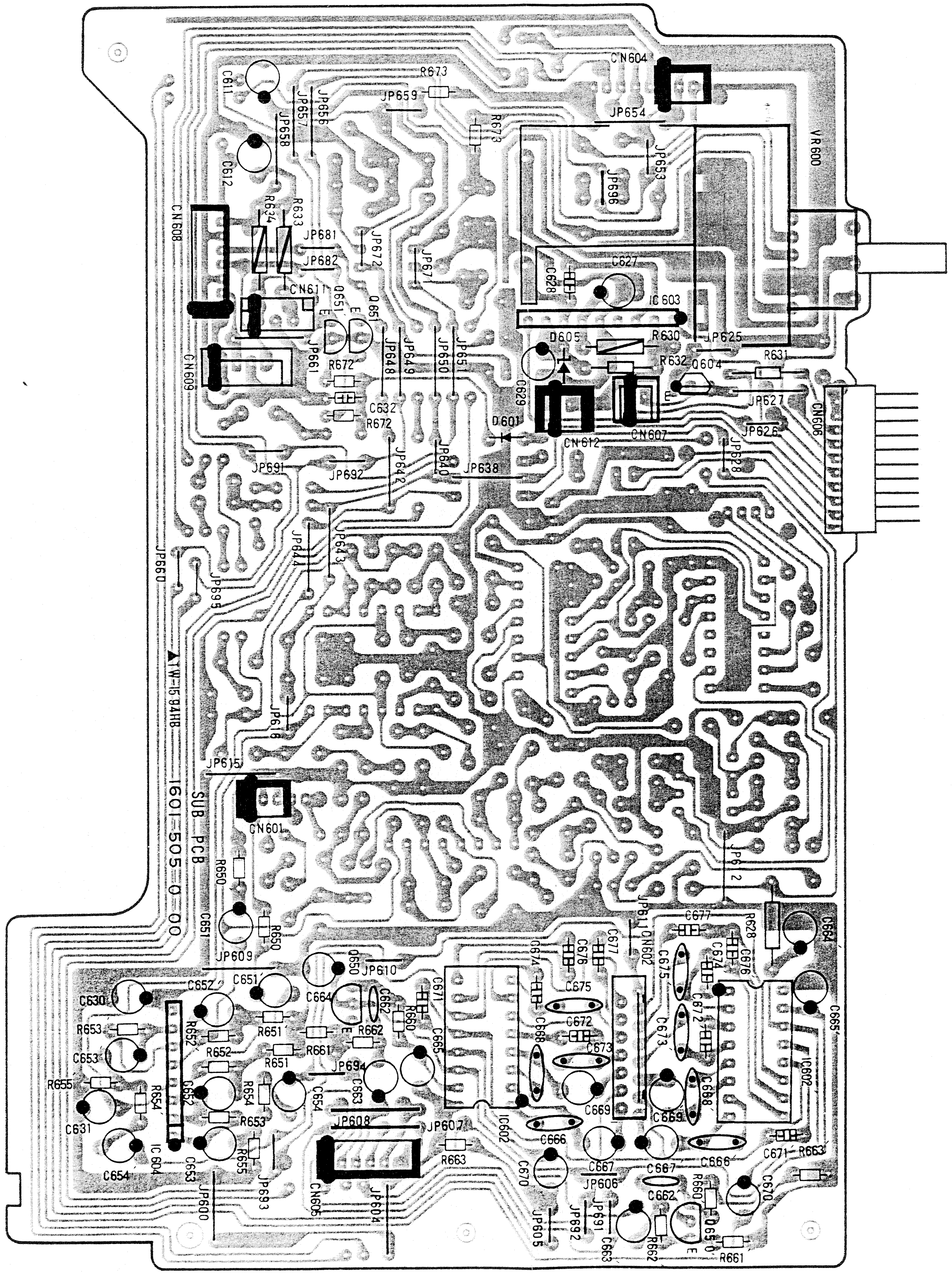

C700
C701
CP700
R750
JP706
J101
C752
C753
R754
R752
IC701
R751
R753
C750
JP702
C751
R752
JP708
JP709
C783
C752
R754
1601-500-0-96 H.P. MIC PCB
H P

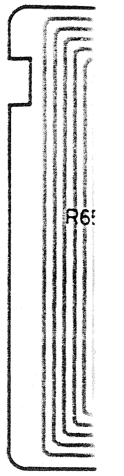
TRACK SIDE


CP700
C700
C701
R750
C750
R752
R750
R753
R751
R753
C751
IC701
C752
R752
R754
J101
C753
C783
R754
C752
C750
C753
1
8

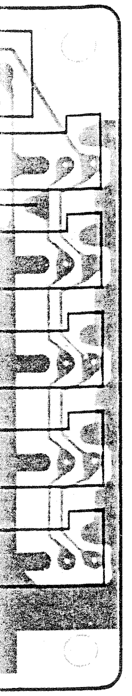
SUB PCB

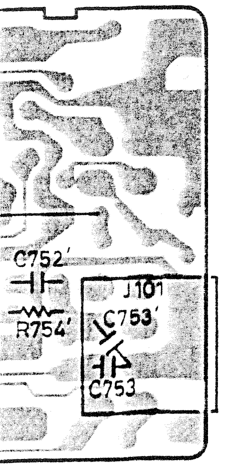
COMPONENT SIDE


C611
R673
JP659
JP657
JP656
JP658
R673
CN604
JP654
VR600
C612
JP653
JP696
CN608
R634
R633
JP681
JP682
JP672
JP671
CN611
Q651
Q651
C628
C627
IC603
JP661
JP648
JP649
JP650
JP651
R630
JP625
D605
R632
Q604
R631
CN609
R672
C632
R672
C629
D601
CN612
CN607
JP627
CN606
JP626
JP691
JP692
JP642
JP640
JP638
JP628
JP660
JP644
JP643
JP693
JP616
TW-15 94HB
JP615
CN601
SUB PCB
1601-505-0-00
R650
JP612
C651
R650
JP609
C650
JP610
C674
C678
C677
CN602
C677
R628
C676
C664
JP611
C652
C651
C664
C662
R660
C671
C675
C675
C674
C630
R653
R652
R651
R662
C665
C668
C672
C673
C673
C672
C665
C653
R652
R661
R651
JP694
C663
C668
IC602
R655
R654
C652
R654
C654
R653
C669
C669
C631
IC604
JP608
JP607
IC602
C666
C671
R663
C653
R655
R663
C670
C667
C667
C666
C670
C654
JP600
JP693
CN605
JP604
JP606
JP692
JP691
C662
R660
JP605
C663
R662
Q650
R661



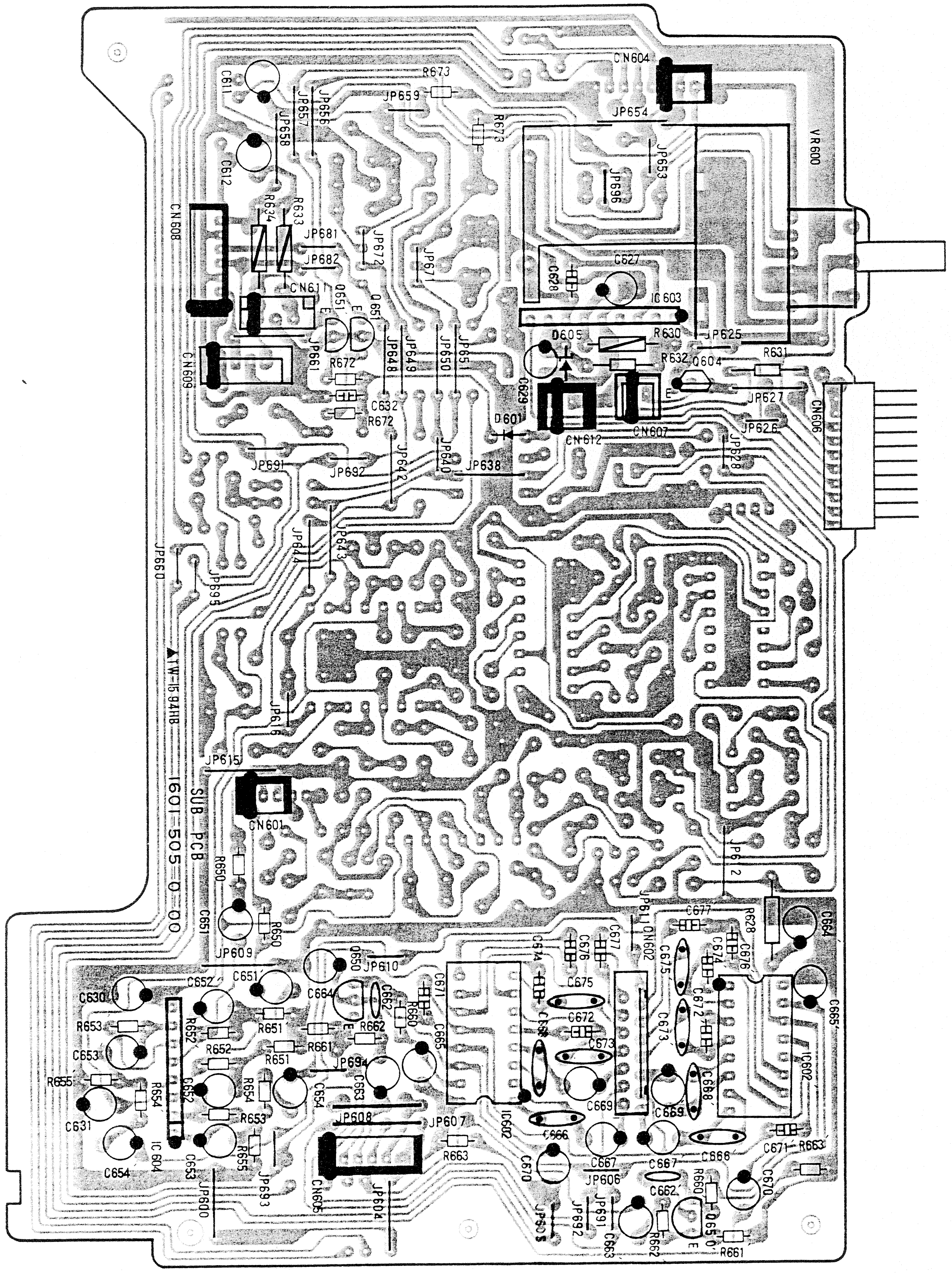
SUB PCB





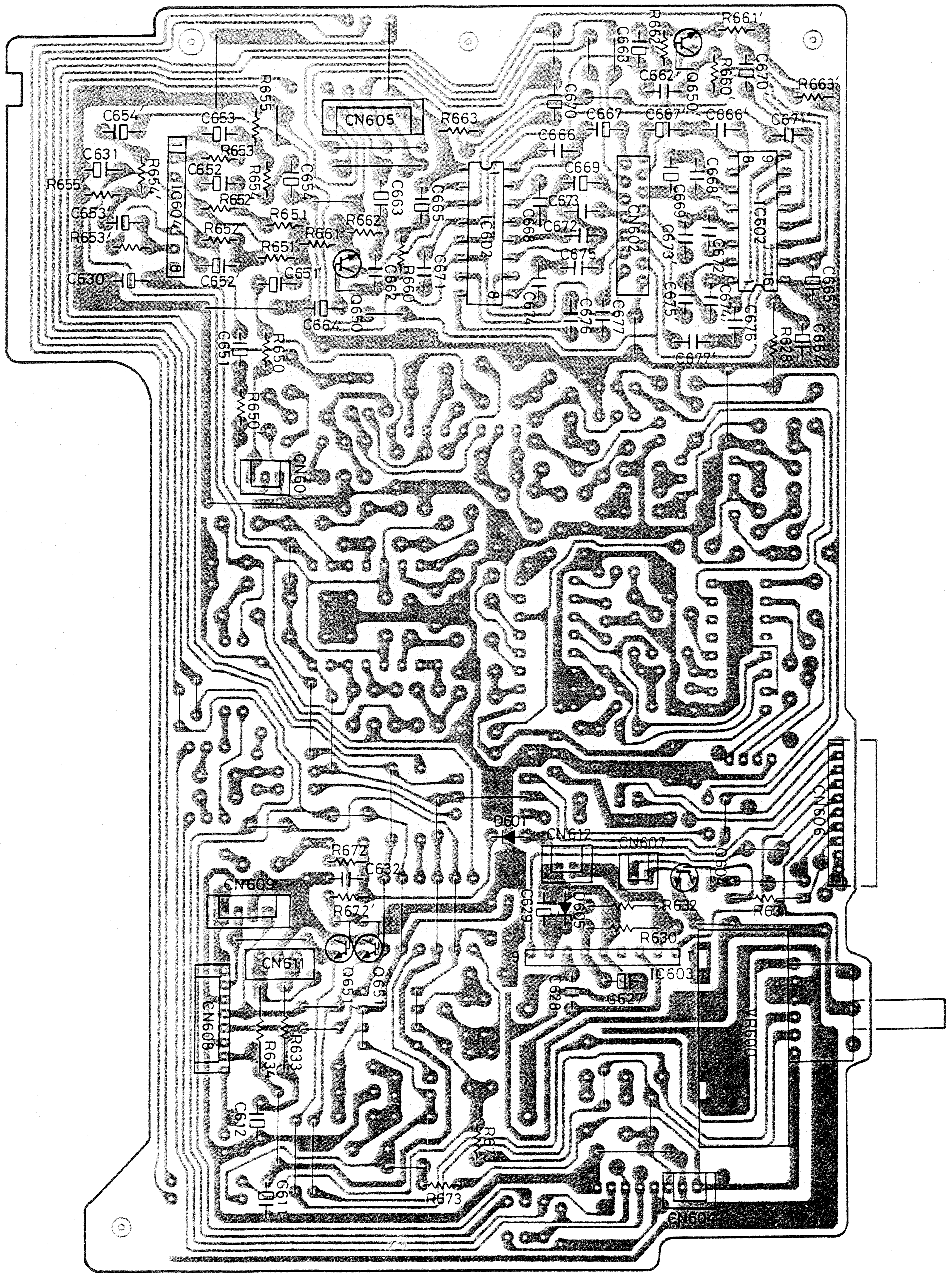
J101
C752'
R754'
C753'
C753

COMPONENT SIDE



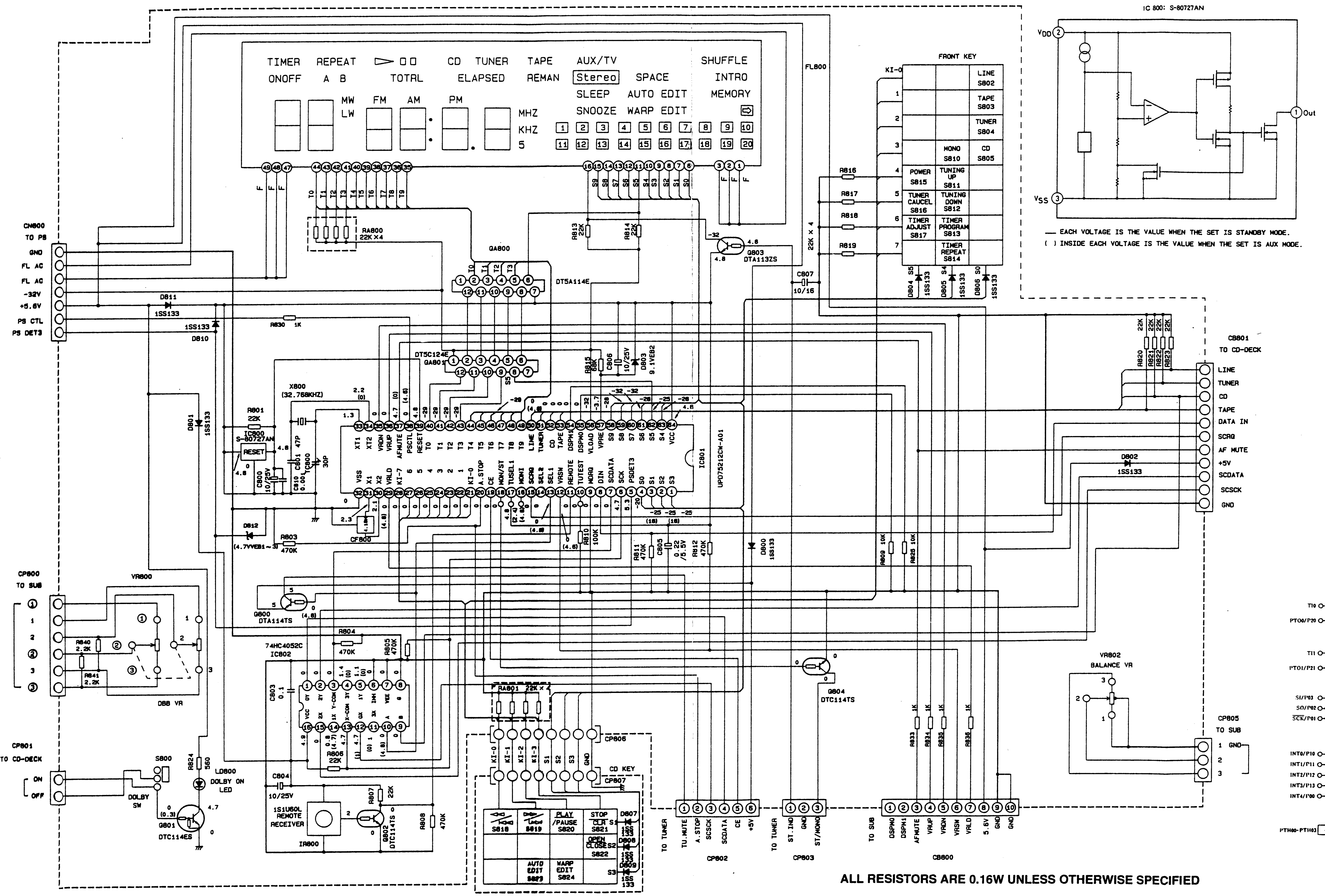
SUB PCB
1601-505-0 00
▲1W-15 94HB
CN604
CN606
CN607
CN608
CN609
CN601
CN605
CN612
CN61
VR600
IC603
IC602
IC604
D601
D605
Q604
Q651
Q650
C611
C612
C627
C628
C629
C630
C631
C632
C651
C652
C653
C654
C663
C664
C665
C666
C667
C669
C670
C671
C672
C673
C674
C675
C676
C677
C688
R628
R630
R631
R632
R633
R634
R650
R651
R652
R653
R654
R655
R660
R661
R662
R663
R672
R673
JP600
JP604
JP606
JP607
JP608
JP609
JP610
JP611
JP612
JP615
JP616
JP625
JP627
JP628
JP638
JP640
JP642
JP643
JP644
JP648
JP649
JP650
JP651
JP653
JP654
JP656
JP657
JP658
JP659
JP660
JP661
JP671
JP672
JP681
JP682
JP691
JP692
JP693
JP694
JP695
JP696

TRACK SIDE



CN604
CN605
CN606
CN607
CN608
CN609
CN60
CN611
CN612
VR600
IC602
IC603
IC604
D601
D605
Q604
Q650
Q651
C611
C612
C627
C628
C629
C630
C631
C632
C651
C652
C653
C654
C662
C663
C664
C665
C666
C667
C668
C669
C670
C671
C672
C673
C674
C675
C676
C677
R628
R630
R631
R632
R633
R634
R650
R651
R652
R653
R654
R655
R660
R661
R662
R663
R672
R673

SCHEMATIC DIAGRAM SYSTEM

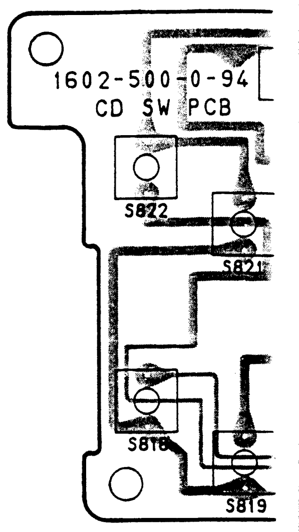

TIMER REPEAT CD TUNER TAPE AUX/TV SHUFFLE
ONOFF A B TOTAL ELAPSED REMAN Stereo SPACE INTRO
SLEEP AUTO EDIT MEMORY
SNOOZE WARP EDIT
MW LW FM AM PM MHZ KHZ
FL800
CN800 TO PS
GND
FL AC
FL AC
-32V
+5.6V
PS CTL
PS DET3
D811 1SS133
D810 1SS133
R830 1K
RA800 22K×4
QA800 DT5A114E
Q803 DTA113ZS
R813 22K
R814 22K
C807 10/16
R816 R817 R818 R819
22K × 4
FRONT KEY
KI-0 KI-1
LINE S802
TAPE S803
TUNER S804
MONO S810
CD S805
POWER S815
TUNING UP S811
TUNER CAUCEL S816
TUNING DOWN S812
TIMER ADJUST S817
TIMER PROGRAM S813
TIMER REPEAT S814
D804 1SS133
D805 1SS133
D806 1SS133
IC 800: S-80727AN
VDD
VSS
Out
DT5C124E QA801
R815 68K
C806 10/25V
D803 9.1VEB2
X800 (32.768KHZ)
R801 22K
IC800 S-80727AN
RESET
C801 47P
TC800 30P
C800 10/25V
C810 0.001
IC801 UPD75212CW-A01
XT1 XT2 VRDN VRUP AFMUTE PSCTL RESET T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 LINE TUNER CD TAPE DSPH1 DSPH0 VLOAD VPRE S9 S8 S7 S6 S5 S4 VCC
VSS X1 X2 VRLD KI-7 KI-0 A.STOP CE MON/ST TUSEL1 MONI SCRQ SEL2 SEL1 VRSW REMOTE TUTEST MDRQ DIN SCDATA SCK PSDET3 S0 S1 S2 S3
CF800
D812 (4.7VVEB1~3)
R803 470K
R810 100K
R811 470K
C805 0.22/5.5V
R812 470K
D800 1SS133
R809 10K
R825 10K
D802 1SS133
R820 R821 R822 R823 22K
CB801 TO CD-DECK
LINE
TUNER
CD
TAPE
DATA IN
SCRQ
AF MUTE
+5V
SCDATA
SCSCK
GND
D801 1SS133
CP800 TO SUB
VR800
R840 2.2K
R841 2.2K
DBB VR
Q800 DTA114TS
74HC4052C IC802
R804 470K
R805 470K
C803 0.1
R806 22K
RA801 22K × 4
Q804 DTC114TS
VR802 BALANCE VR
CP805 TO SUB
GND
CP801 TO CD-DECK
ON OFF
S800 DOLBY SW
R824 560
LD800 DOLBY ON LED
Q801 DTC114ES
C804 10/25V
1S1U60L REMOTE RECEIVER
IR800
R807 22K
Q802 DTC114TS
R808 470K
CP806
KI-0 KI-1 KI-2 KI-3 S1 S2 S3 GND
CD KEY
CP807
S818 S819 PLAY/PAUSE S820 STOP CLR S821
OPEN CLOSE S822
AUTO EDIT S823 WARP EDIT S824
D807 D808 D809 1SS133
R833 1K R834 1K R835 1K R836 1K
TO TUNER TU.MUTE A.STOP SCSCK SCDATA CE +5V
CP802
TO TUNER ST.IND GND ST/MONO
CP803
TO SUB DSPH0 DSPH1 AFMUTE VRUP VRDN VRSW VRLD 5.6V GND GND
CB800

— EACH VOLTAGE IS THE VALUE WHEN THE SET IS STANDBY MODE.

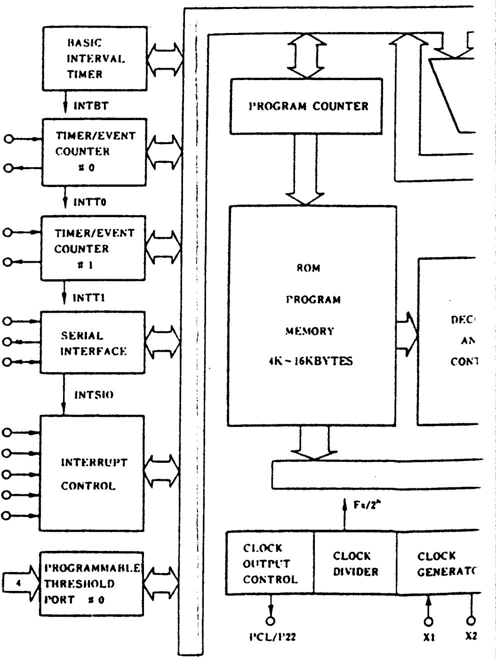
( ) INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS AUX MODE.

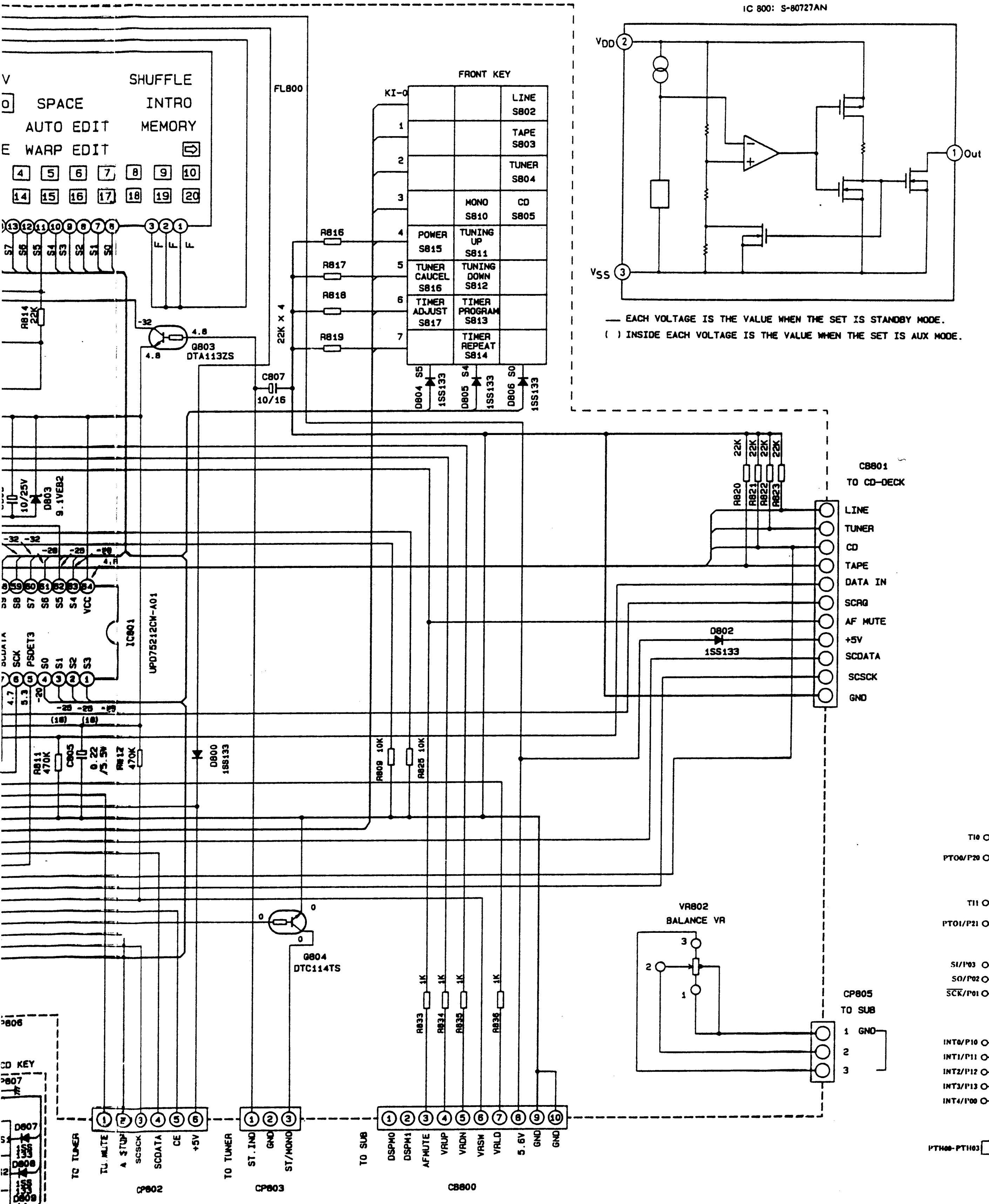
ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

SWITCH PCB
Component Side


1602-500-0-94
CD SW PCB
S822
S821
S818
S819

IC 801:


BASIC INTERVAL TIMER
INTBT
PROGRAM COUNTER
TI0
PTO0/P20
TIMER/EVENT COUNTER #0
INTT0
TI1
PTO1/P21
TIMER/EVENT COUNTER #1
INTT1
SI/P03
SO/P02
SCK/P01
SERIAL INTERFACE
INTSIO
ROM PROGRAM MEMORY 4K~16KBYTES
INT0/P10
INT1/P11
INT2/P12
INT3/P13
INT4/P00
INTERRUPT CONTROL
Fx/2ⁿ
PTH00-PTH03
PROGRAMMABLE THRESHOLD PORT #0
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
PCL/P22
X1 X2


IC 800: S-80727AN
VDD 2
VSS 3
1 Out
FRONT KEY
KI-0
LINE S802
TAPE S803
TUNER S804
MONO S810
CD S805
POWER S815
TUNING UP S811
TUNER CAUCEL S816
TUNING DOWN S812
TIMER ADJUST S817
TIMER PROGRAM S813
TIMER REPEAT S814
R816
R817
R818
R819
22K × 4
FL800
SHUFFLE
SPACE
INTRO
AUTO EDIT
MEMORY
WARP EDIT
Q803 DTA113ZS
C807 10/16
D804 S5 1SS133
D805 S4 1SS133
D806 S0 1SS133
CB801 TO CD-DECK
LINE
TUNER
CD
TAPE
DATA IN
SCRQ
AF MUTE
+5V
SCDATA
SCSCK
GND
R820 R821 R822 R823 22K
D802 1SS133
IC801 UPD75212CW-A01
D803 9.1VEB2
R811 470K
R812 470K
D800 1SS133
R809 10K
R825 10K
Q804 DTC114TS
VR802 BALANCE VR
CP805 TO SUB
R833 R834 R835 R836 1K
TO TUNER
TU. MUTE
ST.IND
SCSCK
SCDATA
CE
+5V
CP802
TO TUNER
ST.IND
GND
ST/MONO
CP803
TO SUB
DSPH0
DSPH1
AFMUTE
VRUP
VRDN
VRSW
VRLD
5.6V
GND
GND
CB800
CD KEY

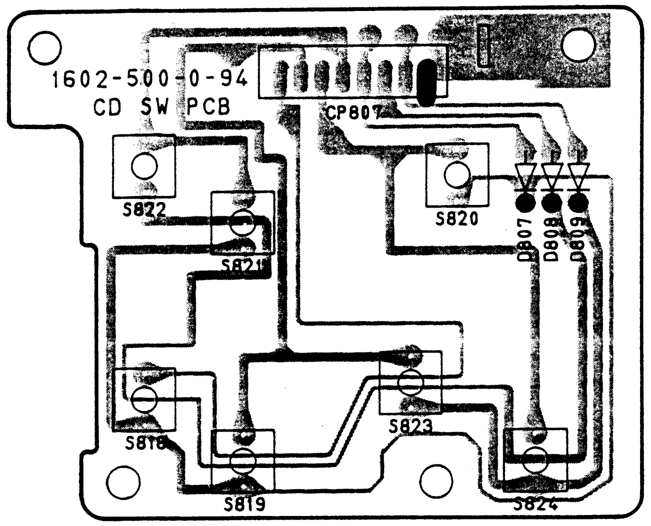
— EACH VOLTAGE IS THE VALUE WHEN THE SET IS STANDBY MODE.

( ) INSIDE EACH VOLTAGE IS THE VALUE WHEN THE SET IS AUX MODE.

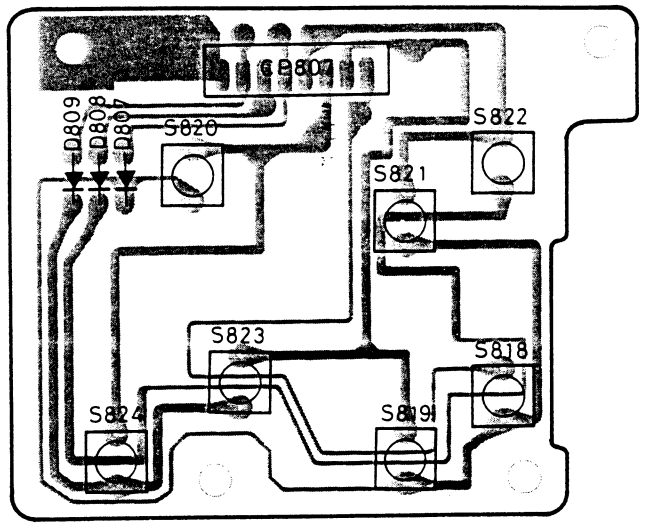
ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

SWITCH PCB

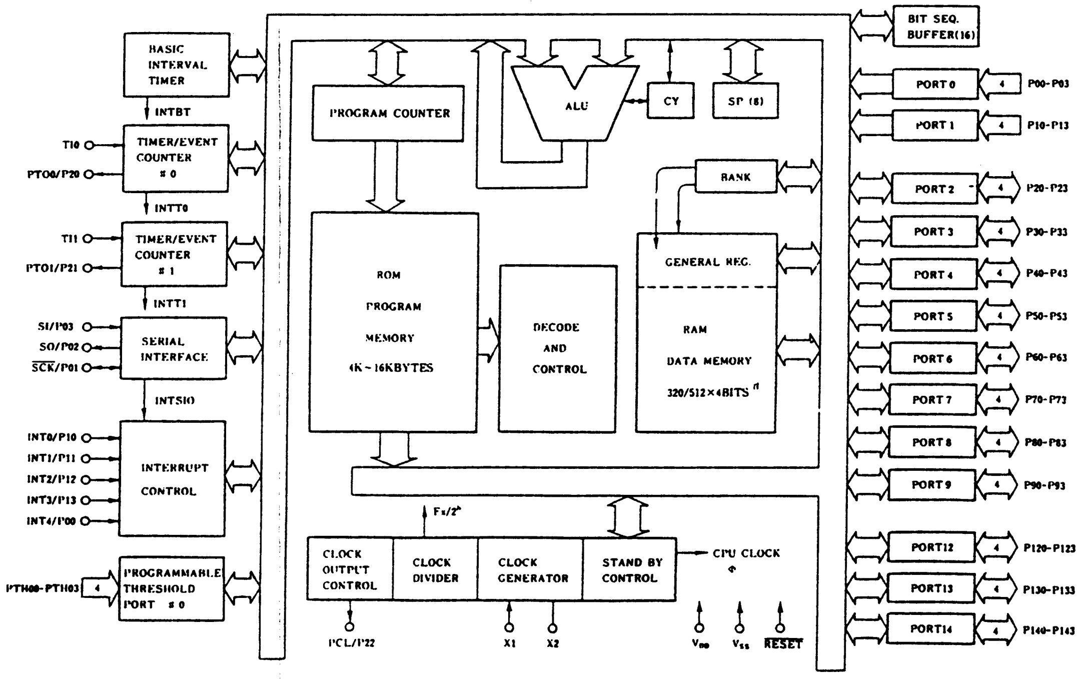
Component Side


1602-500-0-94
CD SW PCB
CP807
S822
S821
S820
D807
D808
D809
S818
S819
S823
S824

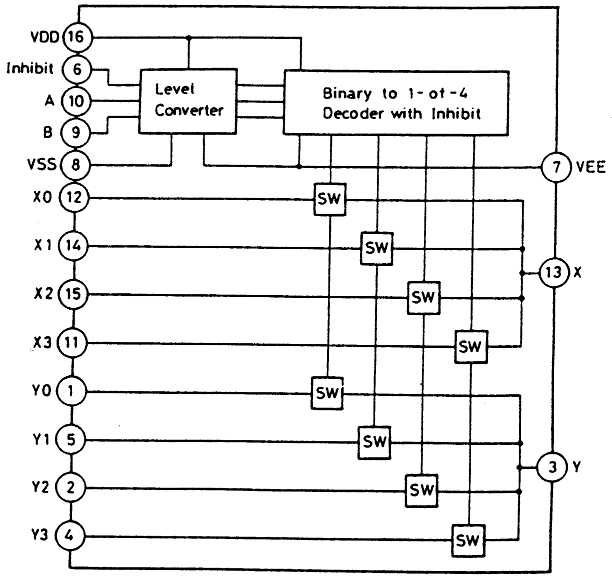
Track Side


CP807
D809
D808
D807
S820
S822
S821
S823
S818
S824
S819

IC 801: UPD75212ACW-A01


BASIC INTERVAL TIMER
INTBT
TI0
PTO0/P20
TIMER/EVENT COUNTER #0
INTT0
TI1
PTO1/P21
TIMER/EVENT COUNTER #1
INTT1
SI/P03
SO/P02
SCK/P01
SERIAL INTERFACE
INTSIO
INT0/P10
INT1/P11
INT2/P12
INT3/P13
INT4/P00
INTERRUPT CONTROL
PTH00-PTH03
PROGRAMMABLE THRESHOLD PORT #0
PROGRAM COUNTER
ALU
CY
SP (8)
BANK
ROM PROGRAM MEMORY 4K-16KBYTES
DECODE AND CONTROL
GENERAL REG.
RAM DATA MEMORY 320/512×4BITS
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
STAND BY CONTROL
CPU CLOCK
Fx/2^n
PCL/P22
X1
X2
VDD
VSS
RESET
BIT SEQ. BUFFER(16)
PORT 0 P00-P03
PORT 1 P10-P13
PORT 2 P20-P23
PORT 3 P30-P33
PORT 4 P40-P43
PORT 5 P50-P53
PORT 6 P60-P63
PORT 7 P70-P72
PORT 8 P80-P83
PORT 9 P90-P93
PORT 12 P120-P123
PORT 13 P130-P133
PORT 14 P140-P143

IC 802: UPD74HC4052C

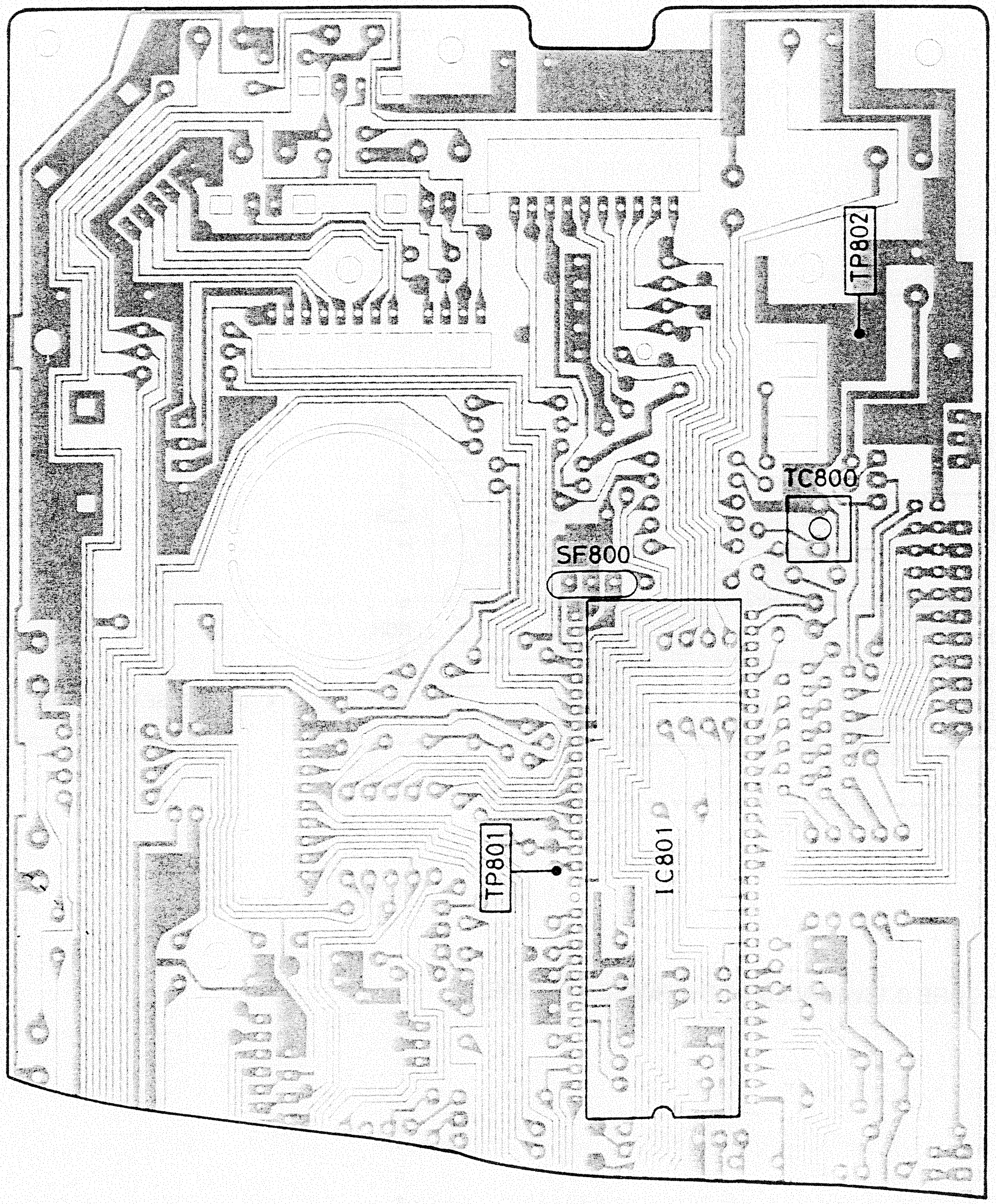

VDD 16
Inhibit 6
A 10
B 9
VSS 8
X0 12
X1 14
X2 15
X3 11
Y0 1
Y1 5
Y2 2
Y3 4
Level Converter
Binary to 1-of-4 Decoder with Inhibit
SW
7 VEE
13 X
3 Y

DISPLAY PCB

	ADJUST WITH	READ ON	ADJUST TO
Clock Alignment	TC800	Frequency counter *	2048±0.5kHz

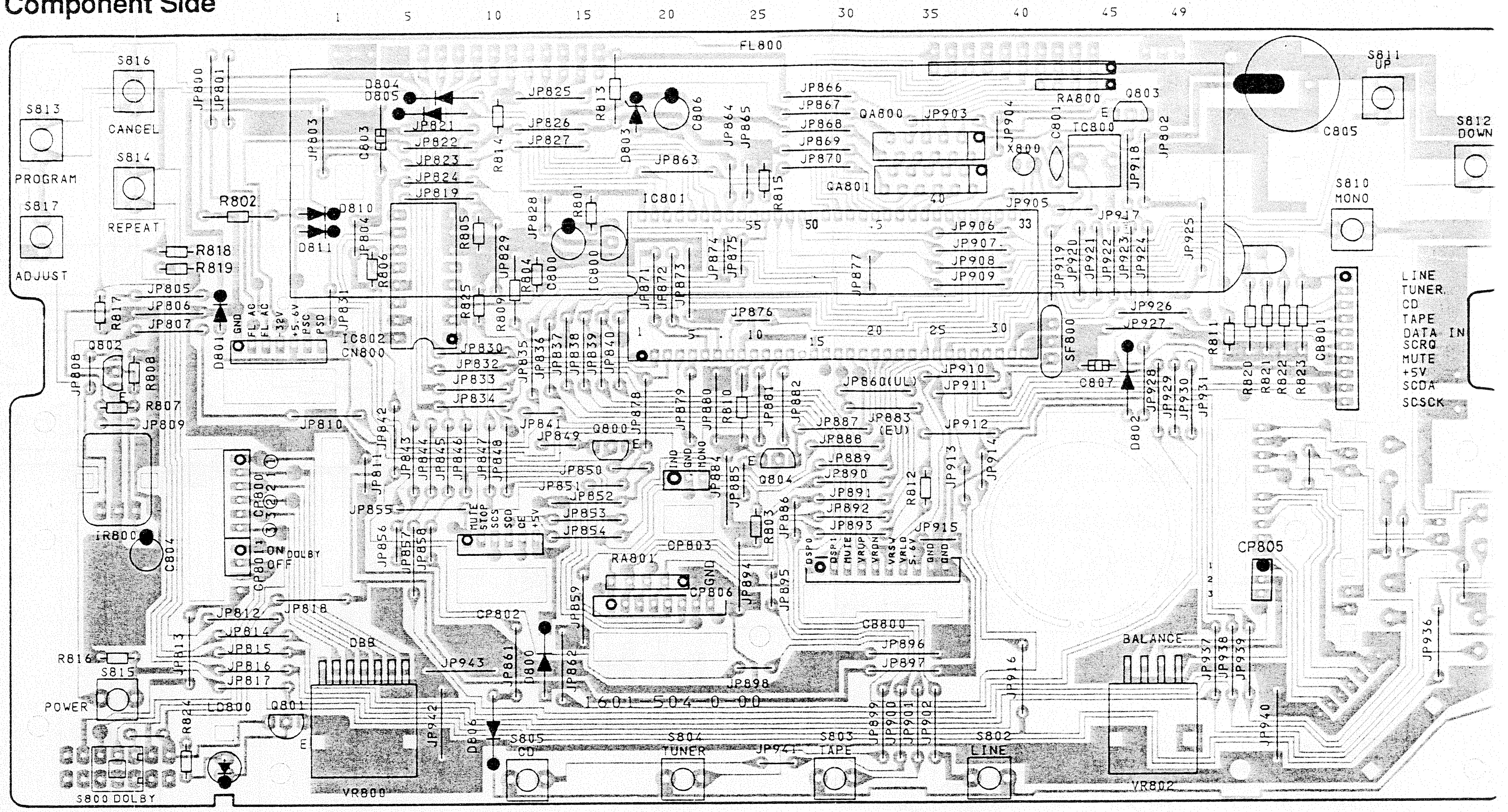
* Across TP801 and TP802 (GND)

Test Point



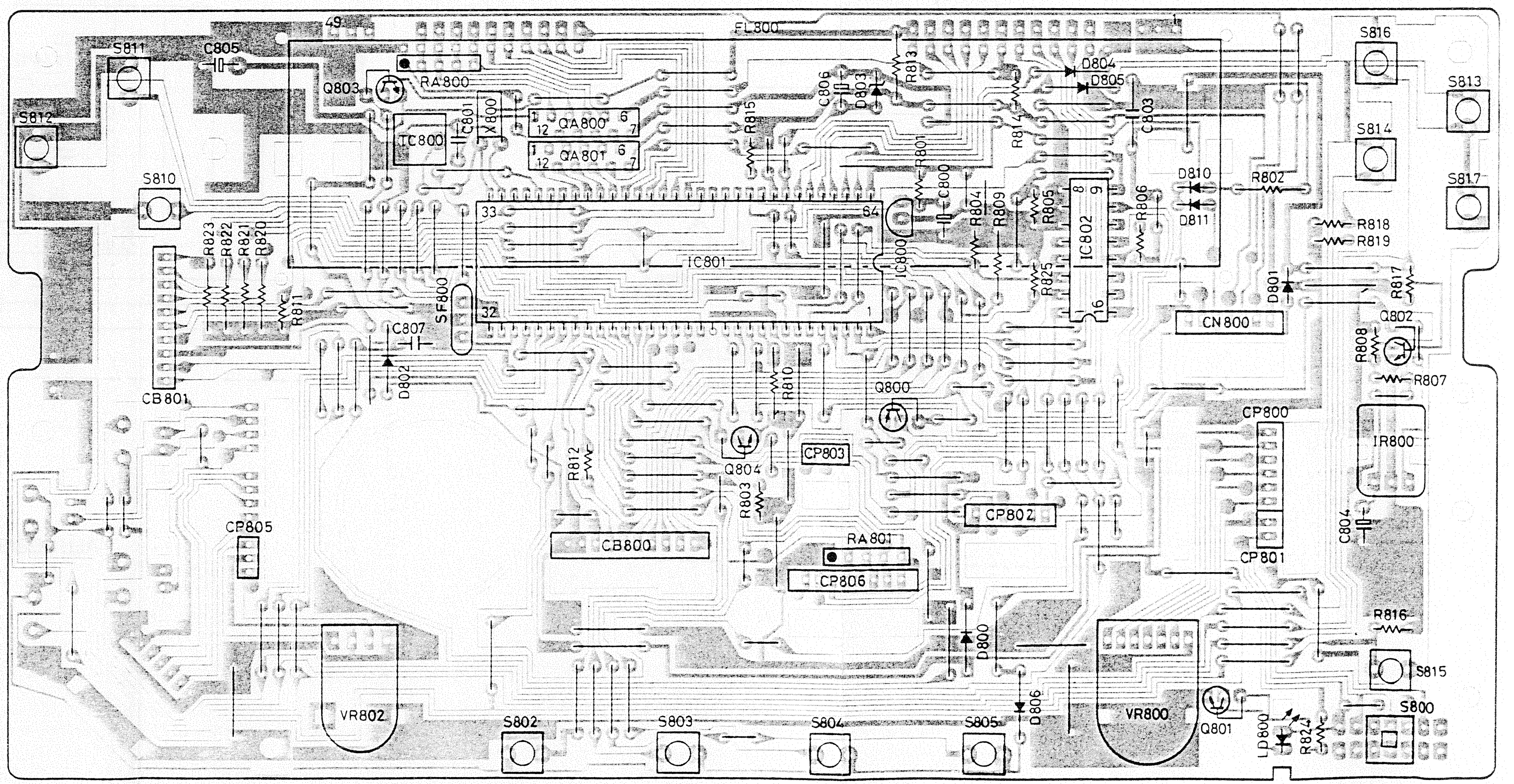
TP802
TC800
SF800
TP801
IC801

Component Side



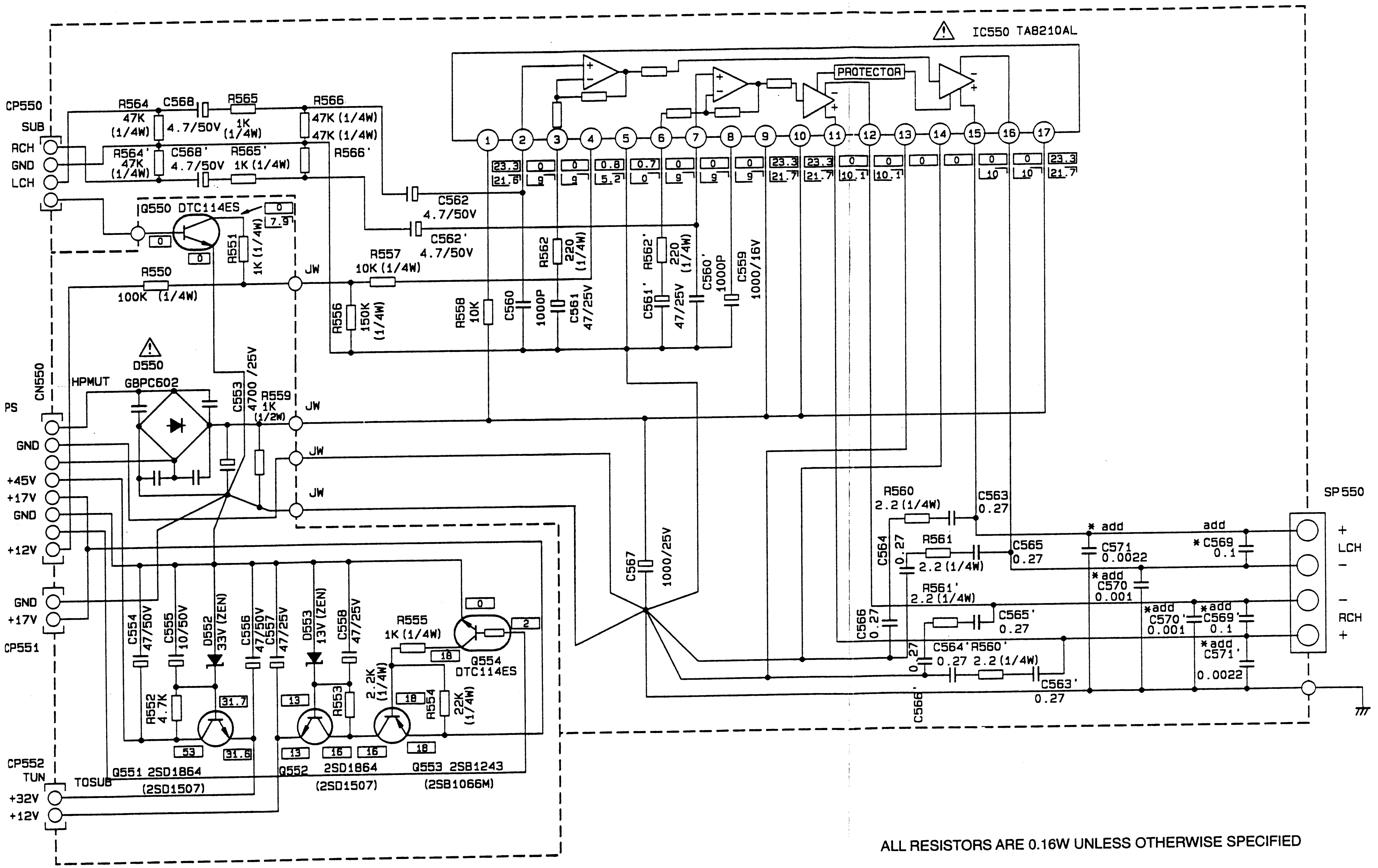
1
5
10
15
20
25
30
35
40
45
49
FL800
S816
CANCEL
S813
PROGRAM
S814
REPEAT
S817
ADJUST
S811
UP
S812
DOWN
C805
S810
MONO
LINE
TUNER
CD
TAPE
DATA IN
SCRQ
MUTE
+5V
SCDA
SCSCK
IC801
IC802
CN800
QA800
QA801
RA800
Q803
TC800
X800
SF800
CB801
CP805
BALANCE
R816
S815
POWER
LD800
Q801
S800 DOLBY
VR800
S805
CD
S804
TUNER
S803
TAPE
S802
LINE
VR802
CP800
CP802
CP803
CP806
RA801
D88
IR800
ON
OFF
DOLBY

Track Side



49
FL800
S811
C805
Q803
RA800
TC800
C801
X800
QA800
QA801
S812
S810
IC801
33
64
32
1
IC800
C800
R804
R809
R805
R825
IC802
8
9
16
R806
D810
D811
R802
R818
R819
S816
S813
S814
S817
R823
R822
R821
R820
R811
SF800
C807
D802
CB801
CN800
D801
R817
Q802
R808
R807
CP800
IR800
R812
Q804
R803
CP803
Q800
CP802
RA801
CP806
CB800
CP805
C804
CP801
R816
S815
S800
D800
D806
VR802
S802
S803
S804
S805
VR800
Q801
LD800
R824
R813
D803
C806
R815
R801
R814
D804
D805
C803

MAIN AMP SCHEMATIC DIAGRAM


IC550 TA8210AL
PROTECTOR
CP550
SUB
RCH
GND
LCH
R564 47K (1/4W)
C568 4.7/50V
R565 1K (1/4W)
R566 47K (1/4W)
R564' 47K (1/4W)
C568' 4.7/50V
R565' 1K (1/4W)
R566' 47K (1/4W)
Q550 DTC114ES
R551 1K (1/4W)
R550 100K (1/4W)
C562 4.7/50V
C562' 4.7/50V
R557 10K (1/4W)
R556 150K (1/4W)
R558 10K
C560 1000P
R562 220 (1/4W)
C561 47/25V
R562' 220 (1/4W)
C561' 47/25V
C560' 1000P
C559 1000/16V
JW
D550 GBPC602
HPMUT
CN550
PS
GND
+45V
+17V
GND
+12V
C553 4700/25V
R559 1K (1/2W)
GND
+17V
CP551
C554 47/50V
C555 10/50V
D552 33V (ZEN)
C556 47/50V
C557 47/25V
D553 13V (ZEN)
C558 47/25V
R555 1K (1/4W)
Q554 DTC114ES
R552 4.7K
R553 2.2K (1/4W)
R554 22K (1/4W)
Q551 2SD1864 (2SD1507)
Q552 2SD1864 (2SD1507)
Q553 2SB1243 (2SB1066M)
CP552
TUN
TOSUB
+32V
+12V
C567 1000/25V
R560 2.2 (1/4W)
C563 0.27
C564 0.27
R561 2.2 (1/4W)
C565 0.27
R561' 2.2 (1/4W)
C565' 0.27
C566 0.27
C564' R560' 0.27 2.2 (1/4W)
C563' 0.27
C566'
* add C571 0.0022
*add C570 0.001
add *C569 0.1
*add C570' 0.001
*add C569' 0.1
*add C571' 0.0022
SP550
+ LCH −
− RCH +
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
23.3 21.6
0 9
0 9
0.8 5.2
0.7 0
0 9
0 9
0 9
23.3 21.7
23.3 21.7
0 10.1
0 10.1
0
0
0 10
0 10
23.3 21.7
0 7.9
0
0
0
2
18
31.7
53
31.6
13
13
16
16
18
18

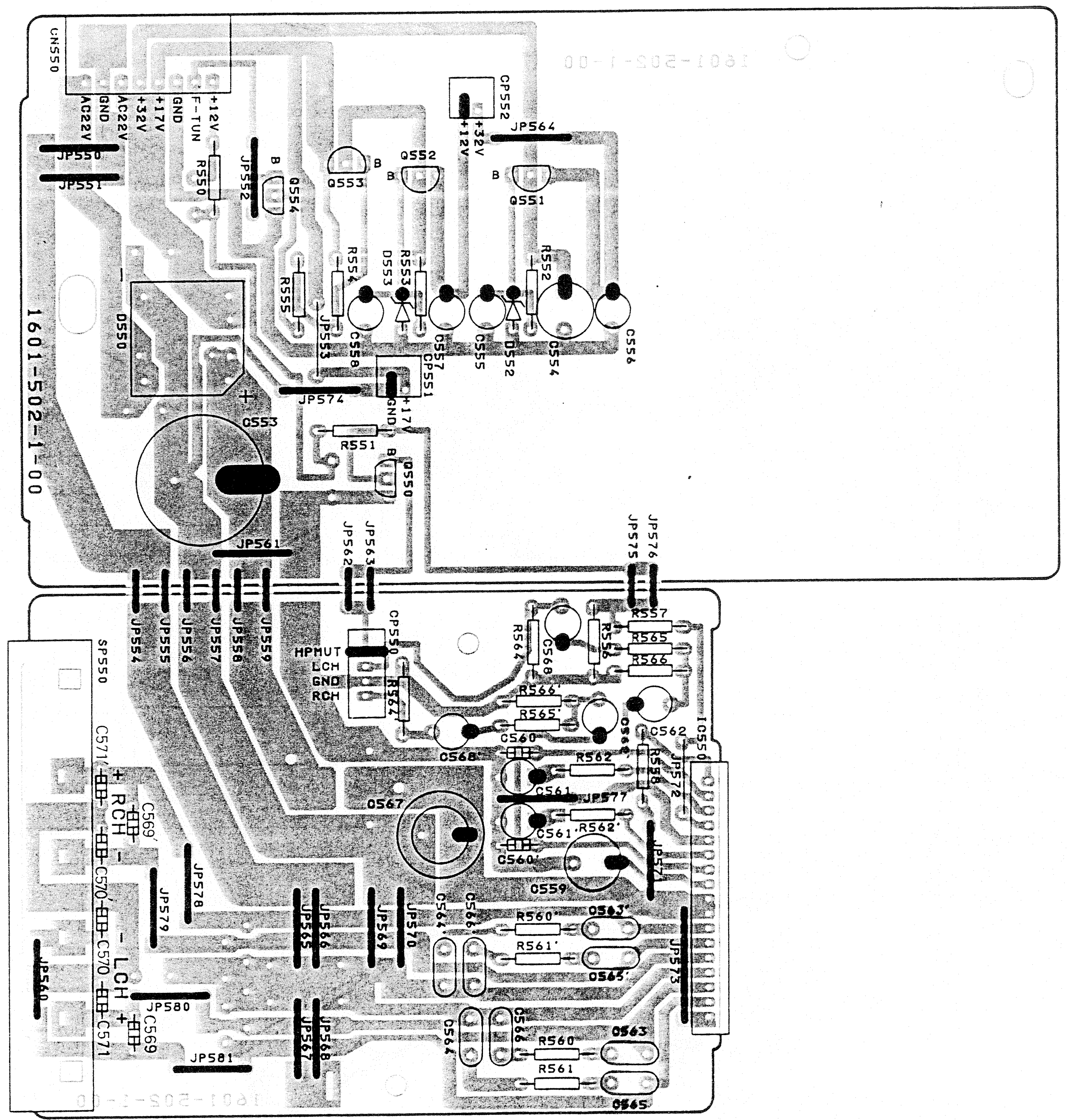
ALL RESISTORS ARE 0.16W UNLESS OTHERWISE SPECIFIED

* IF THE SET IS MADE AT FTZ VERSION.

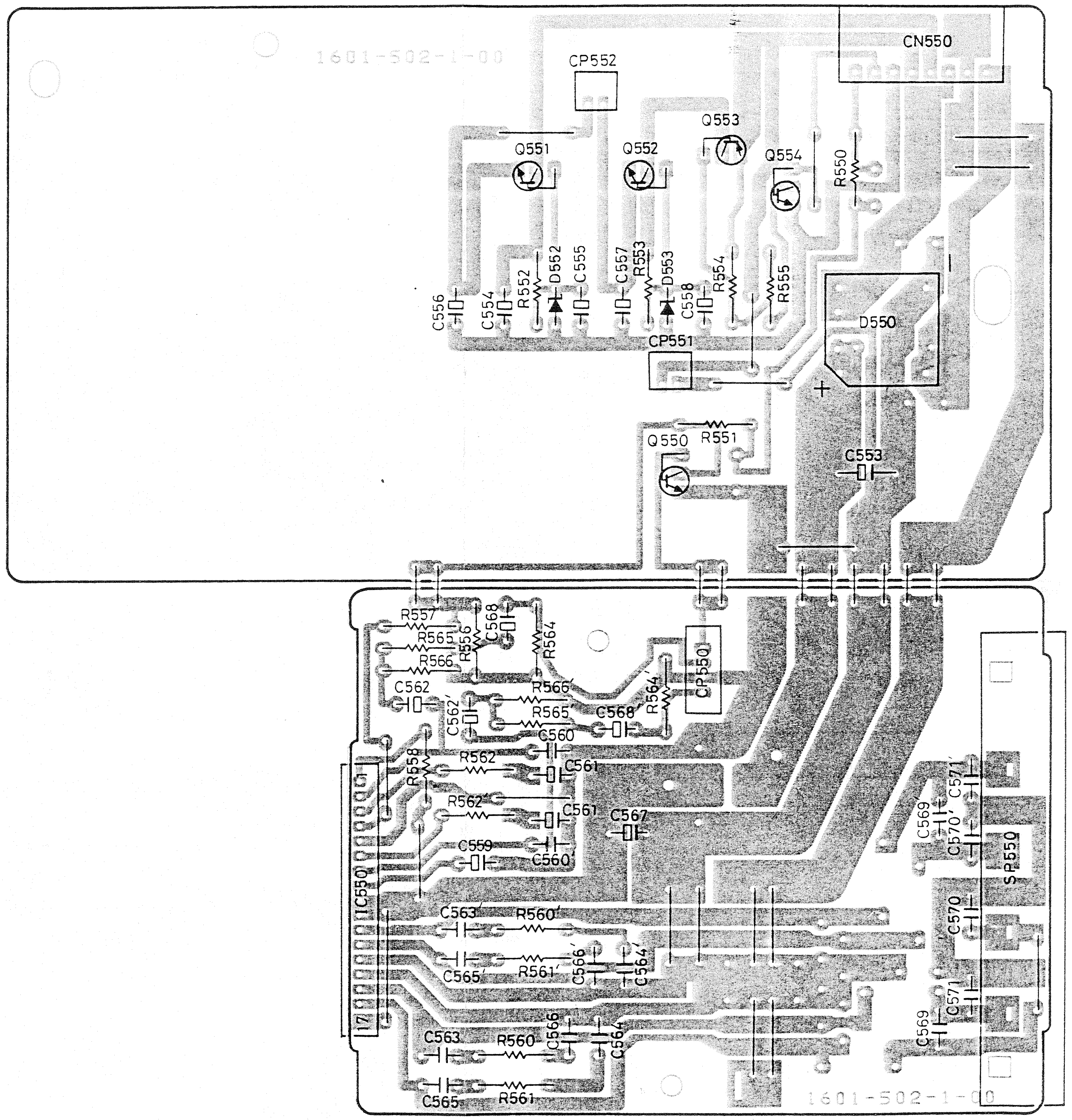
add ⟶ additional parts (x6)

MAIN AMPLIFIER

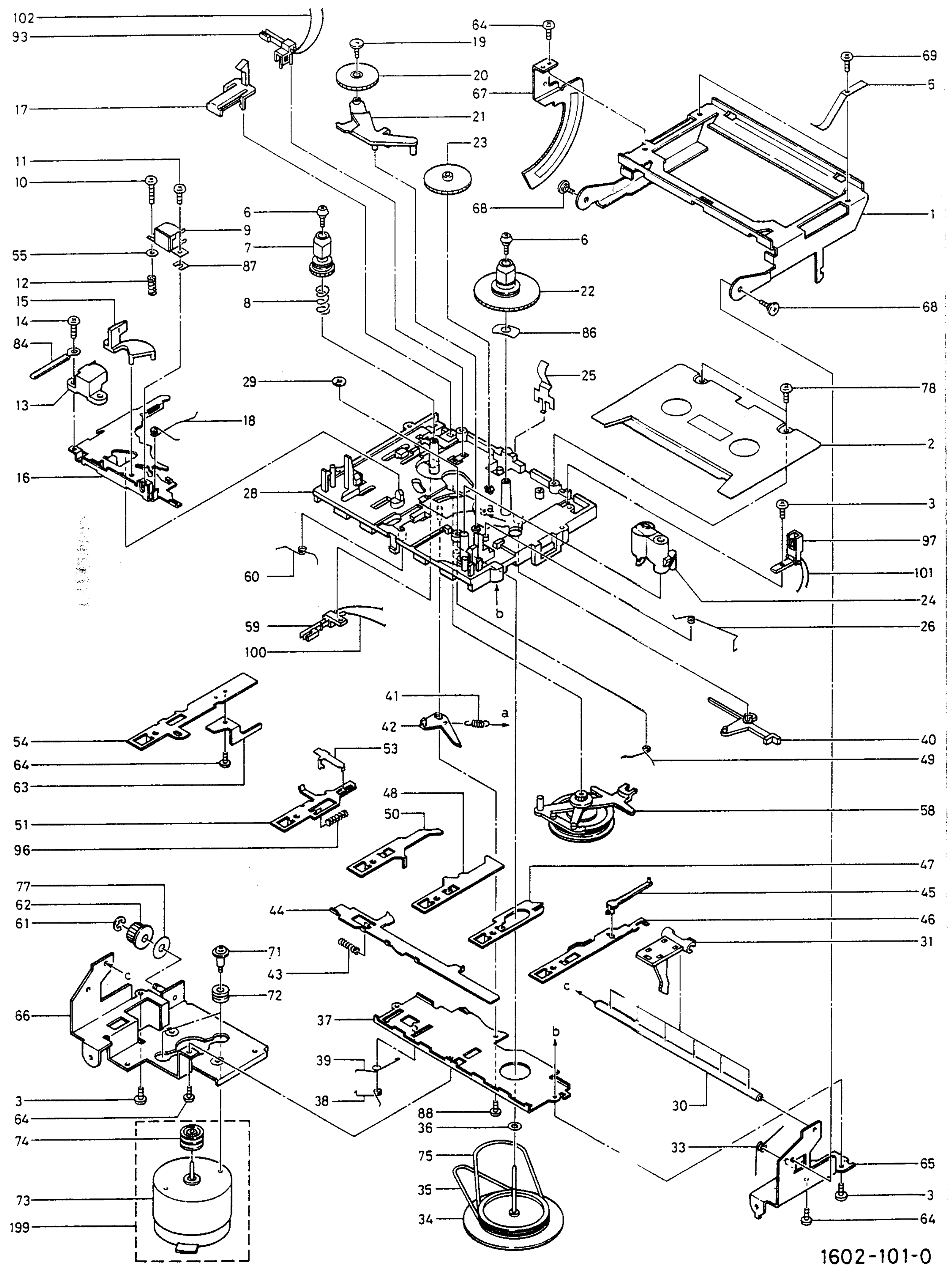
COMPONENT SIDE


CN550
AC22V
GND
AC22V
+32V
+17V
GND
F-TUN
+12V
JP550
JP551
R550
JP552
Q554
Q553
Q552
CP552
+32V
+12V
JP564
Q551
R555
R554
D553
R553
R552
C558
C557
C555
D552
C554
C556
CP551
JP553
JP574
D550
Q553
R551
GND
+17V
Q550
JP561
JP562
JP563
JP575
JP576
1601-502-1-00
SP550
JP554
JP555
JP556
JP557
JP558
JP559
HPMUT
LCH
GND
RCH
CP550
R564
C568
R556
R557
R565
R566
C562
IC550
C560
R562
R558
JP572
C561
JP577
C567
C559
JP571
C571
C569
RCH
C570
JP578
JP579
LCH
JP560
JP580
JP581
JP565
JP566
JP569
JP570
C564
C566
R560
R561
C563
C565
JP573
JP567
JP568

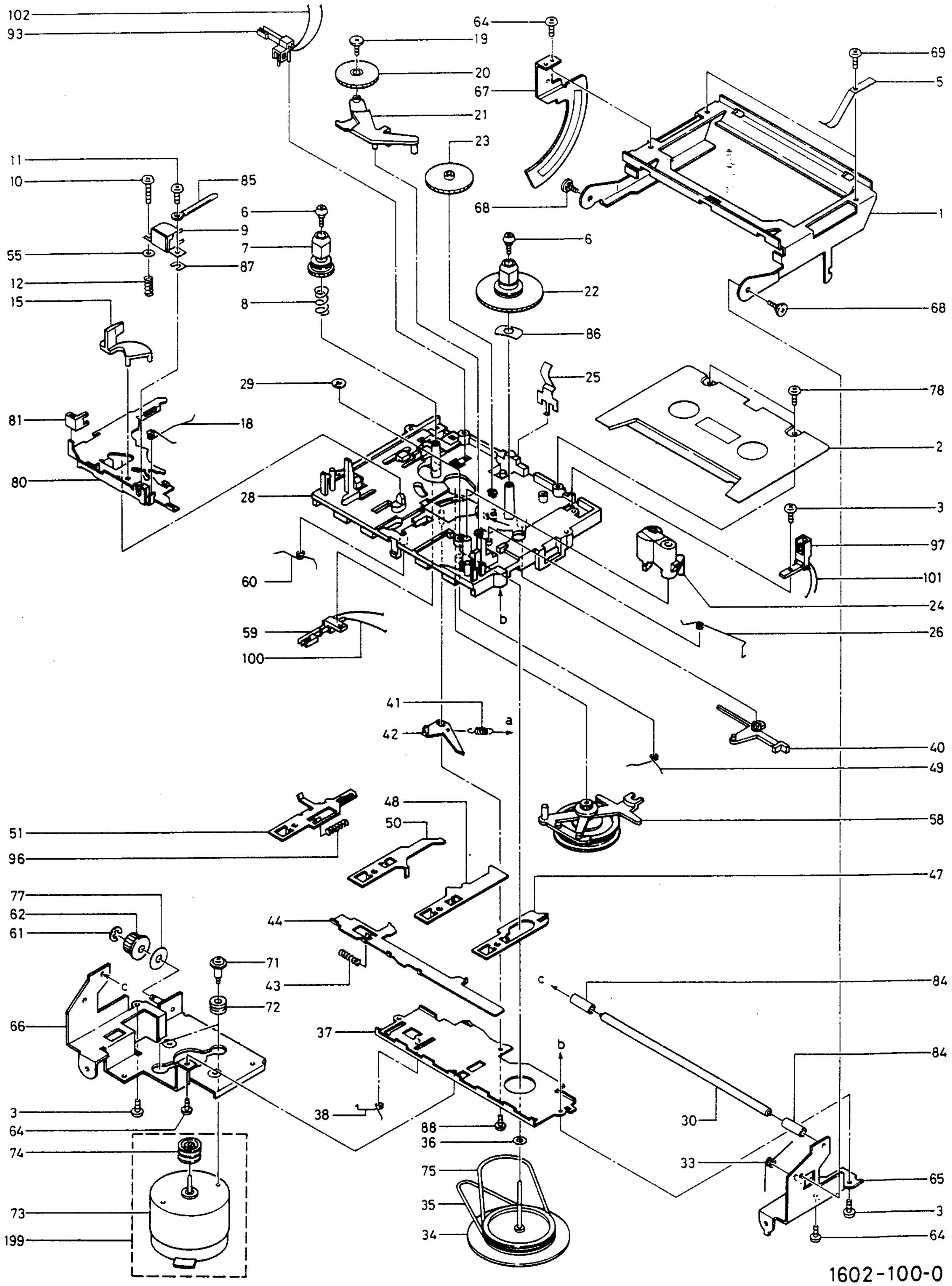
TRACK SIDE


1601-502-1-00
CP552
CN550
Q551
Q552
Q553
Q554
R550
C556
C554
R552
D552
C555
C557
R553
D553
C558
R554
R555
CP551
D550
Q550
R551
C553
R557
R565
R566
R556
C568
R564
C562
CP550
C560
C561
R558
R562
C567
C559
IC550
C563
R560
C565
R561
C566
C564
C569
C570
C571
SP550

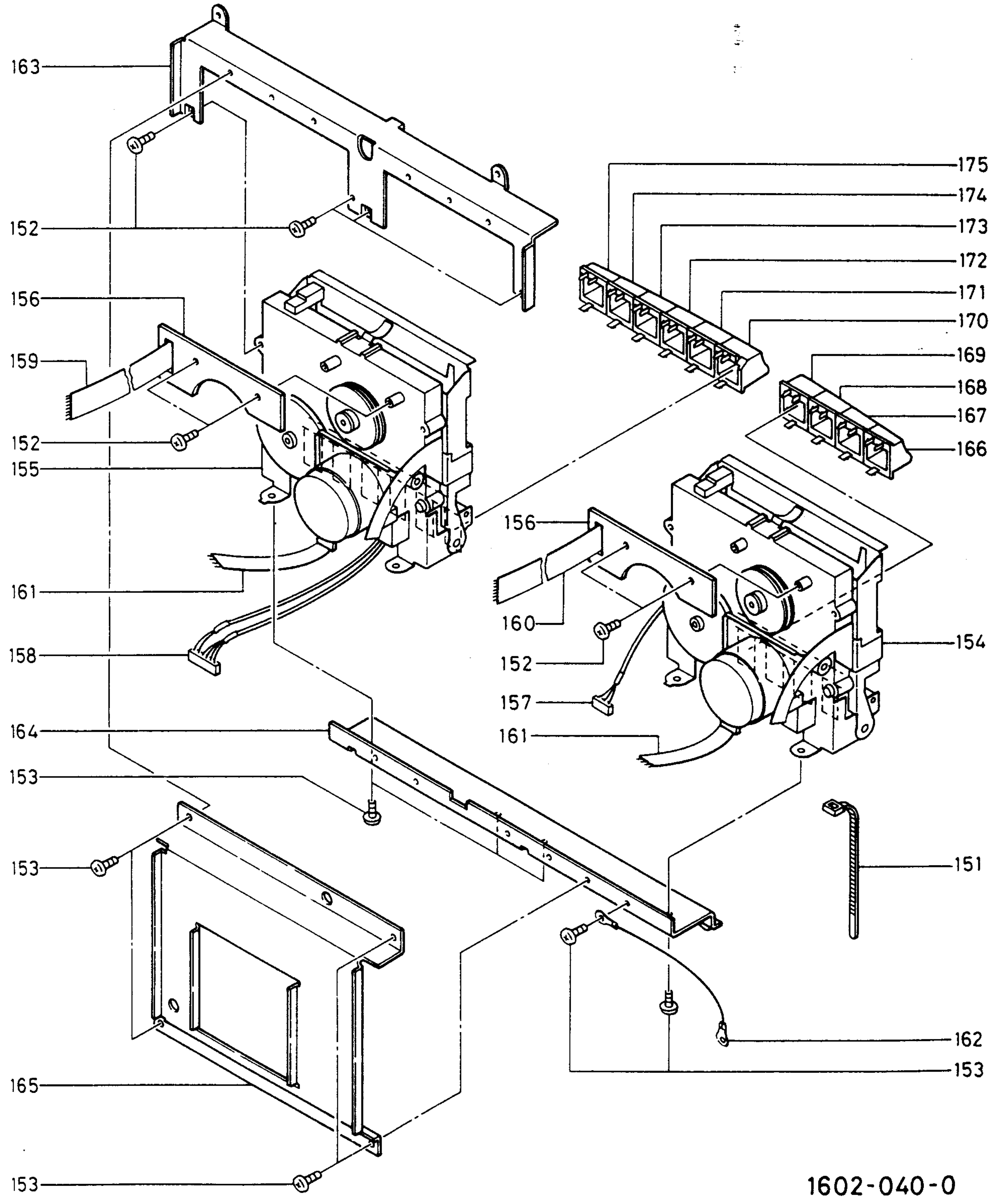
MECHANISM SET EXPLODED VIEW (R/P)


102
93
17
11
10
55
12
15
14
84
13
16
64
19
20
67
21
23
6
9
7
87
8
68
6
22
86
25
69
5
1
68
29
28
18
78
2
3
97
101
24
26
60
59
100
a
b
41
42
53
54
64
63
51
96
48
50
40
49
58
47
45
46
31
44
43
71
72
77
62
61
66
c
37
39
38
88
36
75
35
34
3
64
74
73
199
30
33
65
3
64
1602-101-0

MECHANISM SET EXPLODED VIEW (P)

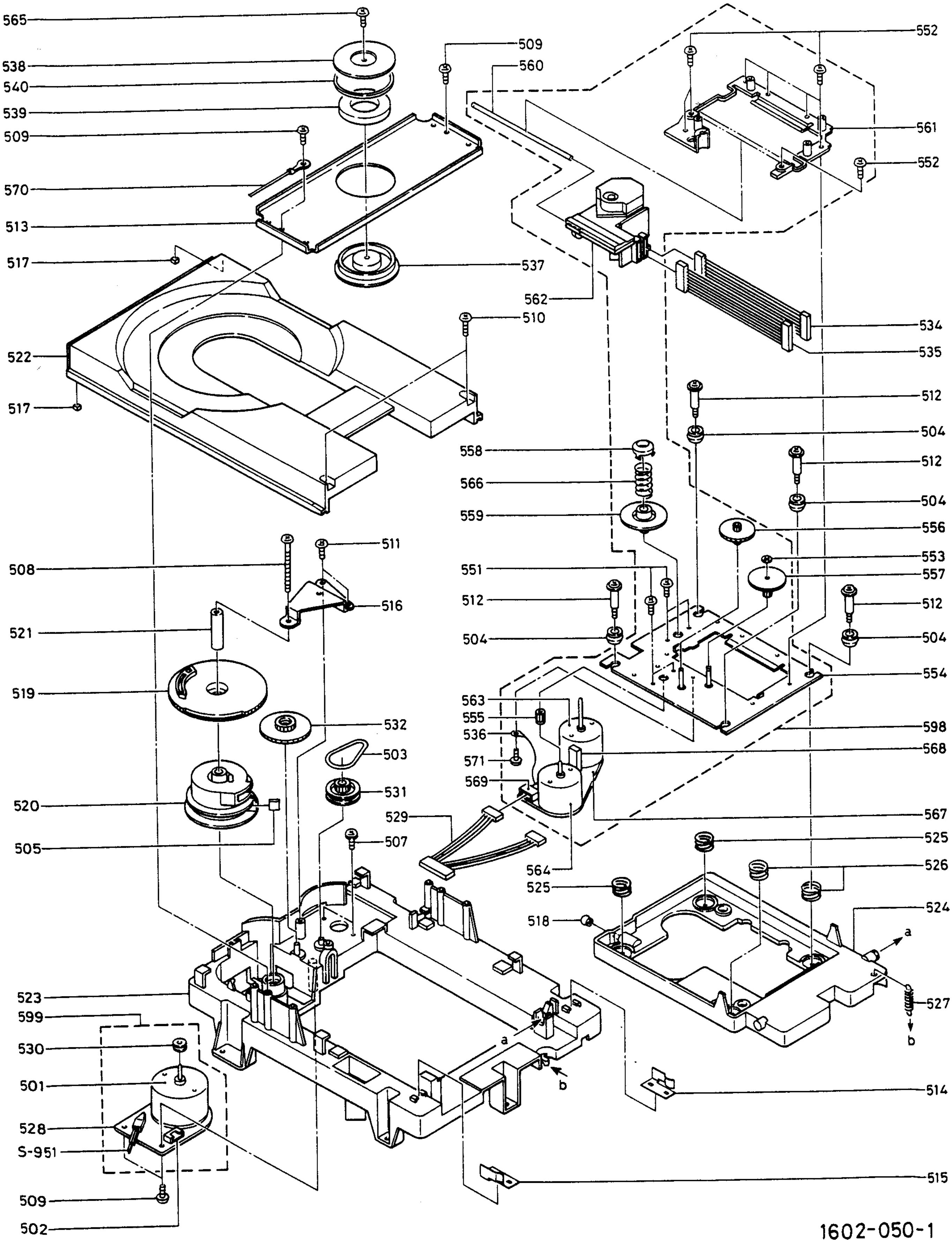

102
93
64
19
20
67
21
23
69
5
1
11
10
85
6
9
7
87
55
12
15
8
68
6
22
86
68
25
29
81
18
78
80
28
2
3
97
101
24
60
59
100
26
41
42
a
b
40
49
48
50
51
96
58
47
77
62
61
44
71
43
84
66
72
c
37
84
3
64
74
38
88
36
75
73
35
34
199
30
33
65
3
64
1602-100-0

MECHANISM UNIT EXPLODED VIEW


163
152
156
159
152
155
161
158
164
153
153
165
153
175
174
173
172
171
170
169
168
167
166
156
160
152
157
161
154
151
162
153

1602-040-0

CD MECHANISM UNIT EXPLODED VIEW


565
538
540
539
509
570
513
517
522
517
509
560
537
562
510
552
561
552
534
535
512
504
512
504
556
553
557
512
504
554
598
568
567
525
526
524
527
558
566
559
551
512
504
563
555
536
571
569
529
564
525
518
508
511
516
521
519
532
503
531
520
505
507
523
599
530
501
528
S-951
509
502
514
515
a
b
a
b
1602-050-1

SCREWS LIST FOR ALL EXPLODED VIEW

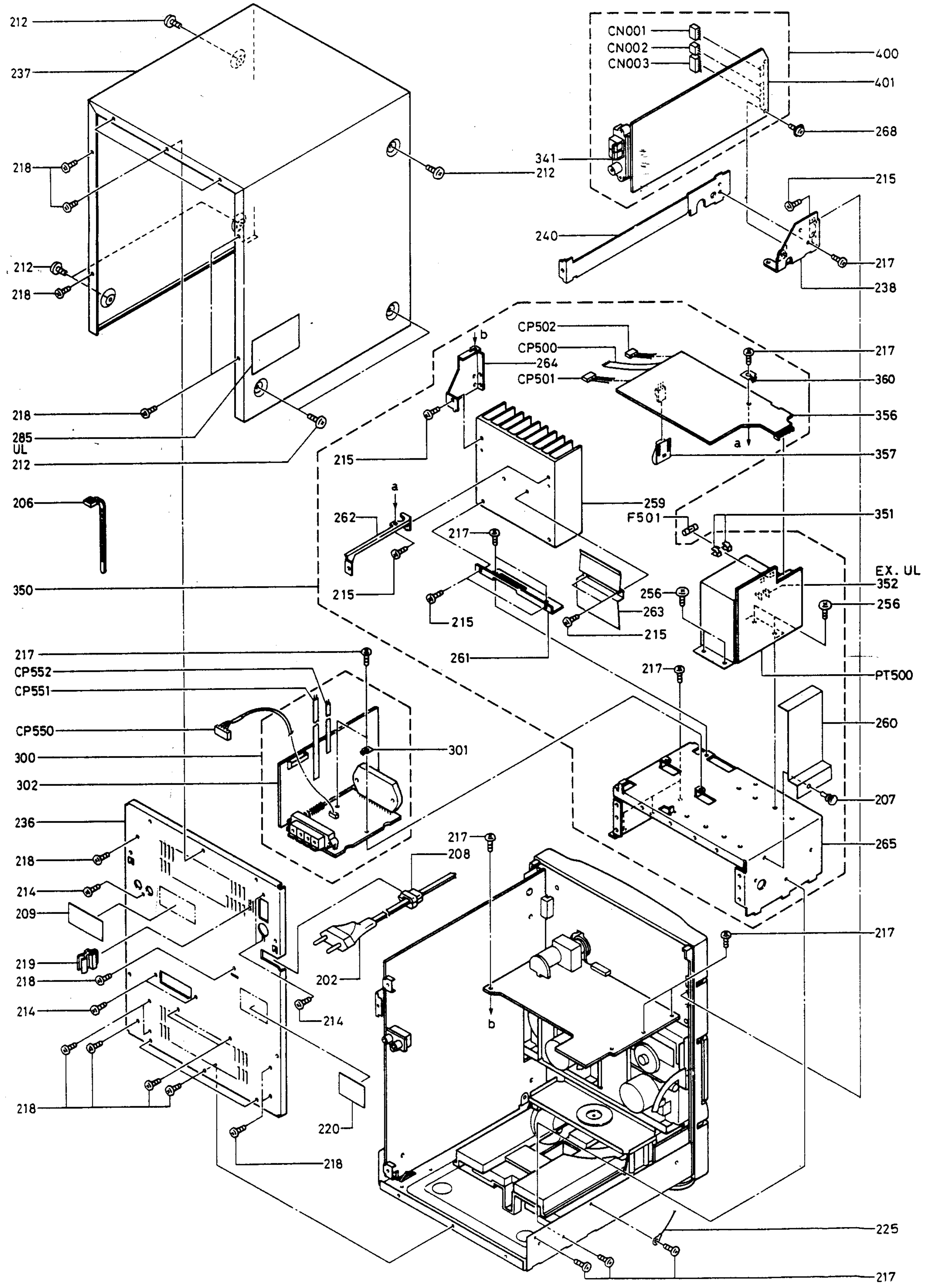
3	D2.6 X 6
10	M2 X 8
11	M2 X 3
14	M2 X 6
64	M2 X 4
68	M2 X 3
69	M2 X 3
78	M2.6 X 6
152	M2.6 X 8
153	M3 X 6
212	M4 X 6
214	D3 X 8
215	D3 X 8
216	D2.6 X 6
217	M3 X 6
218	M3 X 6
268	M3 X 6
421	M3 X 6
507	D2.6 X 5
508	D3 X 3.5
509	D2.6 X 8
510	D2.6 X 12
511	D3 X 8
541	M2 X 5
565	D2 X 4

5	4822 466 93042
9	4822 249 10425
13	4822 249 40276
24	4822 402 61403
35	4822 358 31163
59	4822 278 90695
62	4822 522 33156
75	4822 358 31162
93	4822 277 30885
97	4822 278 90694
154	4822 691 20709
155	4822 691 20711
166	4822 410 61603
167	4822 410 61604
168	4822 410 61605
169	4822 410 61606
170	4822 410 61607
171	4822 410 61608
172	4822 410 61609
173	4822 410 61611
174	4822 410 61612
175	4822 410 61613
199	4822 361 21483
503	4822 498 20126
504	4822 466 62073
505	4822 466 93025
512	4822 502 13784
514	4822 256 91797
515	4822 256 91798
517	4822 466 62075
518	4822 528 70755
519	4822 522 33116
520	4822 402 61392
522	4822 466 93157
525	4822 492 52268
526	4822 492 52269
527	4822 492 70957
531	4822 522 33115
532	4822 522 33117
537 !	4822 492 70956
537	4822 492 70988 (Seban)
538 !	4822 532 52505
539 !	4822 532 12081
540	4822 466 62074
562	4822 691 30282
598 !	4822 691 20781
599	4822 361 21498

Note : Only the mentioned parts are normal service parts.

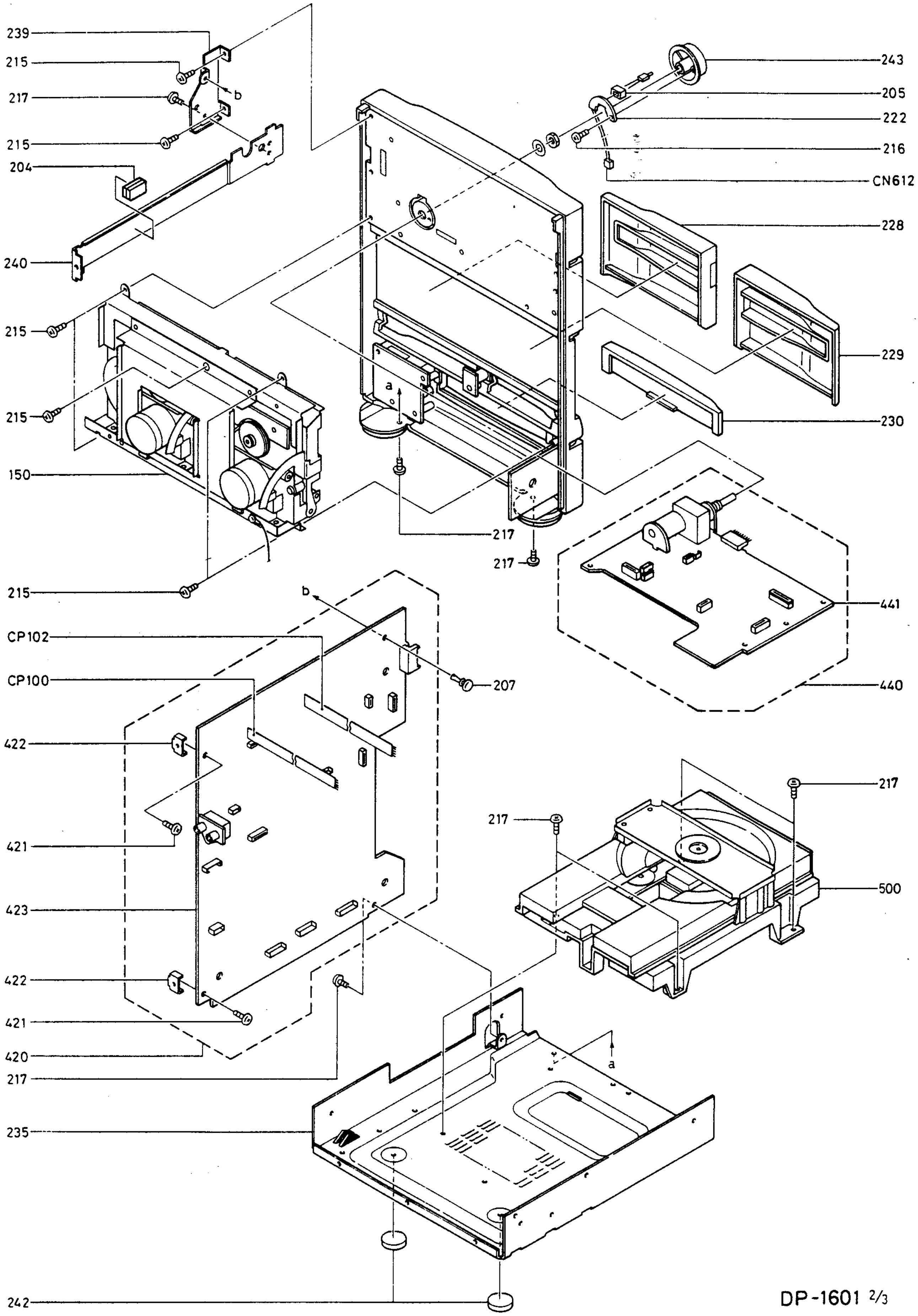
! For Sony mech.

UNIT ASSEMBLY EXPLODED VIEW


212
237
218
212
218
218
285
UL
212
206
350
217
CP552
CP551
CP550
300
302
236
218
214
209
219
218
214
218
220
218
202
214
208
217
b
CN001
CN002
CN003
400
401
268
341
212
215
240
217
238
CP502
CP500
264
CP501
b
217
360
356
a
357
215
259
a
262
F501
351
217
215
EX. UL
352
256
256
215
263
215
261
217
PT500
301
260
207
265
217
225
217

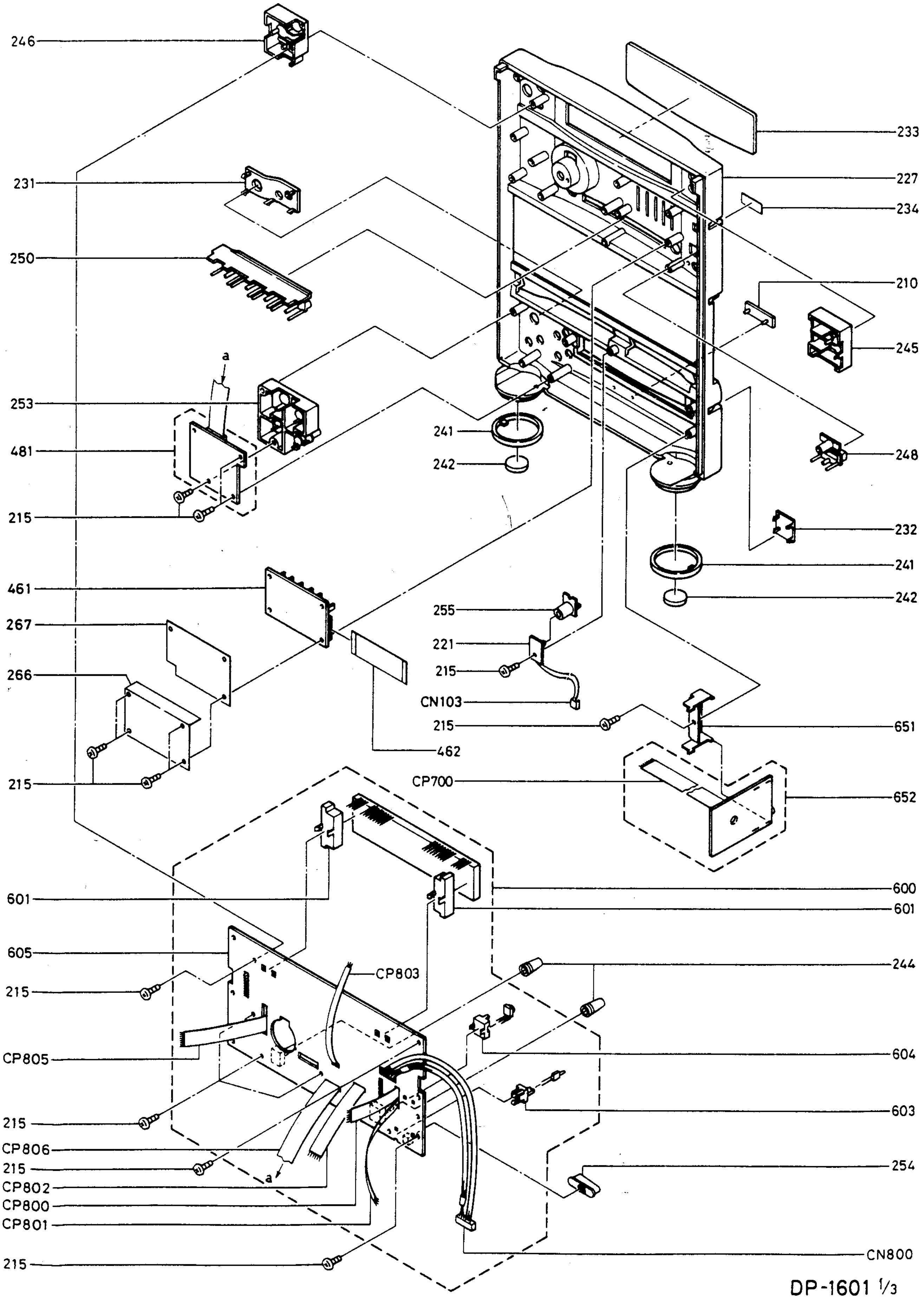
DP-1601 3/3

UNIT ASSEMBLY EXPLODED VIEW

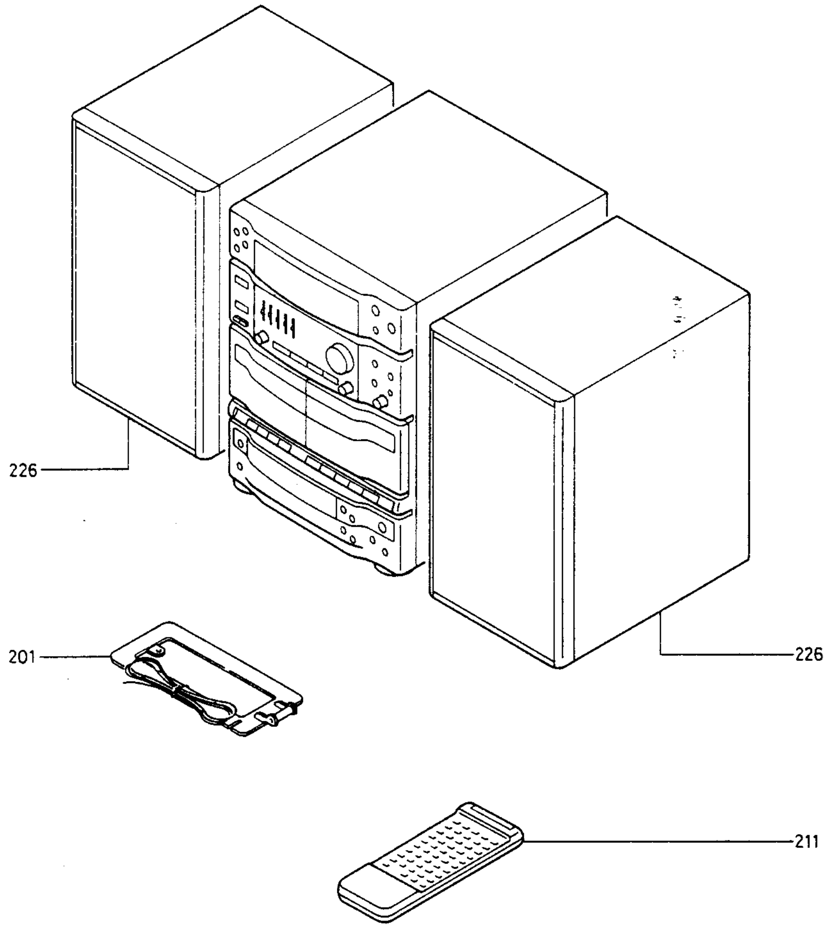

239
215
217
b
215
204
240
215
215
150
215
243
205
222
216
CN612
228
229
230
a
217
217
441
440
b
CP102
CP100
207
422
421
423
422
421
420
217
235
242
217
217
500
a

DP-1601 2/3

UNIT ASSEMBLY EXPLODED VIEW


246
231
250
a
253
481
215
461
267
266
215
601
605
215
CP805
215
CP806
215
CP802
CP800
CP801
215
241
242
255
221
215
CN103
215
462
CP700
CP803
a
233
227
234
210
245
248
232
241
242
651
652
600
601
244
604
603
254
CN800

DP-1601 1/3



201	4822 303 30404
204	4822 466 93044
207	4822 535 30137
208	4822 528 40341
210	4822 459 11069
211	4822 218 10434
219	4822 404 21171
226	4822 445 10302
227	4822 426 51523
228	4822 443 63479
229	4822 443 63481
230	4822 444 50671
231	4822 444 50672
232	4822 444 50673
233	4822 450 61829
234	4822 450 61798
241	4822 462 71791
242	4822 462 41874
243	4822 413 51392
244	4822 413 51393
245	4822 413 51394
246	4822 413 51395
248	4822 410 61597
250	4822 411 61843
253	4822 410 61601
254	4822 410 61697
255	4822 380 20421
263	4822 256 91847
301	4822 466 82893
341	4822 290 61037
357	4822 255 41234
360	4822 466 82906
462	4822 321 61403
601	4822 404 60706
IFU	4822 736 21324

Note : Only the mentioned parts are normal service parts.

MISCELLANEOUS

CB800	4822 265 41172		Connector 10P
CB801	4822 265 41173		Connector 10P
CN510	4822 267 51128		Connector 8P SET
CN602	4822 265 41169		Connector 15P
CN603	4822 265 41171		Connector 15P
CN606	4822 265 41174		Connector PIN 10P
CP101	4822 265 41175		Connector PIN 10P
FL800	4822 130 91044		FLD Display
IP300	4822 252 20291	⚠	Fuse 0.4A
IP301	4822 252 20291	⚠	Fuse 0.4A 50V
IP500	4822 130 82846	⚠	Fuse 1A 50V
IP501	4822 130 82846	⚠	Fuse 1A 50V
IP502	4822 130 82845	⚠	Fuse 0.6A 50V
IP503	4822 130 82845	⚠	Fuse 0.6A 50V
IP504	4822 130 82846	⚠	Fuse 1A 50V
IP600	4822 070 31002	⚠	Fuse 1A 250V
IR800	4822 212 23834		RCR IS1U60L
J100	4822 265 20524		Pin jack
J101	4822 267 31423		Mini jack
J102	4822 267 31423		Mini jack
RF1	4822 212 23774		RF module
S800	4822 276 13178		Push switch
S802	4822 276 13132		Tact switch
S803	4822 276 13132		Tact switch
S804	4822 276 13132		Tact switch
S805	4822 276 13132		Tact switch
S810	4822 276 13132		Tact switch
S811	4822 276 13132		Tact switch
S812	4822 276 13132		Tact switch
S813	4822 276 13132		Tact switch
S814	4822 276 13132		Tact switch
S815	4822 276 13132		Tact switch
S816	4822 276 13132		Tact switch
S817	4822 276 13132		Tact switch
S818	4822 276 13132		Tact switch
S819	4822 276 13132		Tact switch
S820	4822 276 13132		Tact switch
S821	4822 276 13132		Tact switch
S822	4822 276 13132		Tact switch
S823	4822 276 13132		Tact switch
S824	4822 276 13132		Tact switch
S951	4822 278 90684		Leaf switch
SP550	4822 267 31375		Speaker socket

C18	4822 126 11932	8pF 50V
C19	4822 126 11933	510pF 50V
C24	4822 126 11931	5pF 50V
CT1	4822 125 50589	Trimmer 30pF 100V
CT2	4822 125 50589	Trimmer 30pF 100V
TC800	4822 125 50608	Trimmer 30pF

R131	4822 116 83475	⚠	3.3Ω 0.25W 5%
R145	4822 116 90783	⚠	100Ω 2W 5%
R337	4822 116 83473	⚠	10Ω 0.25W 5%
R357	4822 116 83541	⚠	47Ω 0.25W 5%
R358	4822 116 83541	⚠	47Ω 0.25W 5%
R359	4822 113 80581	⚠	22Ω 3W 5%
R360	4822 116 90783	⚠	100Ω 2W 5%
R500	4822 116 83476	⚠	0.33Ω 0.5W 5%
R501	4822 116 83476	⚠	0.33Ω 0.5W 5%
R502	4822 116 83473	⚠	10Ω 0.25W 5%
R512	4822 116 83473	⚠	10Ω 0.25W 5%
R518	4822 116 90783	⚠	100Ω 2W 5%
R549	4822 116 83539	⚠	4.7M 0.5W 5%
R628	4822 116 90783	⚠	100Ω 2W 5%
R630	4822 116 83473	⚠	10Ω 0.25W 5%
R633	4822 116 83473	⚠	10Ω 0.25W 5%
R634	4822 116 83473	⚠	10Ω 0.25W 5%
RA800	4822 116 90781		22k X 4 0.5W 5%
RA801	4822 116 90781		22k X 4 0.5W 5%
VR1	4822 100 11568		Trimmer 5k
VR101	4822 100 11848		Trimmer 1k
VR103	4822 100 11848		Trimmer 1k
VR104	4822 101 11157		Trimmer 20k
VR105	4822 101 11157		Trimmer 20k
VR200	4822 101 11157		Trimmer 20k
VR200'	4822 101 11157		Trimmer 20k
VR201	4822 101 11157		Trimmer 20k
VR201'	4822 101 11157		Trimmer 20k
VR202	4822 100 11767		Trimmer 20k
VR202'	4822 100 11767		Trimmer 10k
VR300	4822 101 11157		Trimmer 20k
VR301	4822 101 11157		Trimmer 20k
VR302	4822 101 11157		Trimmer 20k
VR303	4822 101 11157		Trimmer 20k
VR304	4822 101 11156		Trimmer 2k
VR600	4822 100 11832		Potm w/motor
VR651	4822 105 11098		Slide potm 100k
VR652	4822 105 11098		Slide potm 100k
VR653	4822 105 11098		Slide potm 100k
VR654	4822 105 11098		Slide potm 100k
VR655	4822 105 11098		Slide potm 100k
VR800	4822 100 11831		Rotary potm 100k
VR802	4822 100 11829		Rotary potm 100k

CF1	4822 242 80321	Filter 10.7MHz
CF2	4822 242 80321	Filter 10.7MHz
CF3	4822 242 80321	Filter 10.7MHz
CF4	4822 242 81353	Filter 450kHz
CF5	4822 242 80322	Filter 450kHz
CF300	4822 242 80318	Resonator 4.19MHz
L1	4822 157 63373	Coil 10µH

L2	4822 157 63373		Coil 10µH
L3	4822 157 63373		Coil 10µH
L4	4822 157 63374		Coil 100µH
L5	4822 157 63374		Coil 100µH
L6	4822 157 63374		Coil 100µH
L7	4822 157 63374		Coil 100µH
L8	4822 157 63374		Coil 100µH
L9	4822 157 63372		Coil
L10	4822 157 63371		Coil
L11	4822 157 63369		Osc coil
L12	4822 157 63712		Osc coil
L13	4822 157 63368		Coil 1mH
L14	4822 157 70274		Trap coil
LF1	4822 157 63365		Low pass filter
LF2	4822 157 63365		Low pass filter
L200	4822 157 63363		Trap coil
L200'	4822 157 63363		Trap coil
L201'	4822 157 63363		Trap coil
L201	4822 157 63363		Trap coil
L202'	4822 157 63367		Coil 5.6mH
L202	4822 157 63367		Coil 5.6mH
L300	4822 157 52748		Coil 10µH
T1	4822 148 81184		FM IFT coil
T2	4822 142 50162		AM IFT coil
T100	4822 148 81211		Osc trans-8
PT500	4822 146 31049	⚠	Power transformer
SF800	4822 242 81027		Resonator 4.19MHz
X1	4822 242 80328		X'tal 7.2MHz
X300	4822 242 80327		X'tal 16.9344MHz
X800	4822 242 81083		X'tal 32.768kHz

D1	4822 130 81336		1SS131
D2	4822 130 81336		1SS131
D3	4822 130 82646		SVC333A
D4	4822 130 81336		1SS131
D5	4822 130 81336		1SS131
D6	4822 130 82646		SVC333A
D7	4822 130 81336		1SS131
D8	4822 130 81336		1SS131
D9	4822 130 81336		1SS131
D10	4822 130 83235		HZS6.2JB1
D101	4822 130 82647		MPG06B
D102	4822 130 32778		1SS133
D103	4822 130 33861		1SS176
D104	4822 130 32778		1SS133
D105	4822 130 32778		1SS133
D106	4822 130 32778		1SS133
D107	4822 130 32778		1SS133
D108	4822 130 82842		SLR-55VC3F
D300	4822 130 33861		1SS176
D301	4822 130 80992		1SS270
D303	4822 130 32778		1SS133
D304	4822 130 80992		1SS270
D305	4822 130 32778		1SS133
D306	4822 130 32778		1SS133
D307	4822 130 32778		1SS133
D500	4822 130 80305	⚠	KBU4D
D501	4822 130 82647		MPG06B
D502	4822 130 82647		MPG06B
D503	4822 130 80992		1SS270
D504	4822 130 82647		MPG06B
D505	4822 130 82647		MPG06B
D506	4822 130 32778		1SS133
D507	4822 130 82656		RD33ESB2
D508	4822 130 82838		RD12ESB2
D509	4822 130 82838		RD12ESB2
D510	4822 130 82837		RD7.5ESB2
D550	4822 130 50484	⚠	GBPC602L-6398
D552	4822 130 82656		RD33ESB2
D553	4822 130 82839		RD13ESB2
D601	4822 130 32778		1SS133
D605	4822 130 82836		RD3.9ESB2
D800	4822 130 32778		1SS133
D801	4822 130 32778		1SS133
D802	4822 130 32778		1SS133
D803	4822 130 80793		RD9.1ESB2
D804	4822 130 33861		1SS176
D805	4822 130 32778		1SS133
D806	4822 130 33861		1SS176
D807	4822 130 32778		1SS133
D808	4822 130 32778		1SS133
D809	4822 130 32778		1SS133
D810	4822 130 32778		1SS133
D811	4822 130 32778		1SS133
LD600	4822 130 82841		LT2P11G-81
LD800	4822 130 82873		LT2P21-81

IC1	4822 209 30178	LC7218
IC2	4822 209 30174	LA1265S
IC3	4822 209 71489	TA7343AP
IC100	4822 209 83315	LC7815
IC101	4822 209 30182	NJM4558L
IC103	4822 209 71951	BA3416BL
IC104	4822 209 30176	HA12134A
IC105	4822 209 63132	BA7755A
IC106	4822 209 30177	LA3242
IC300	4822 209 63138	CXA1081M
IC301	4822 209 61381	CXA1082BQ
IC302	4822 209 82569	µPD4066BC
IC303	4822 209 30619	TA7291S
IC304	4822 209 30608	µPD75108CW-C52
IC305	4822 209 30131	CXD1167Q

IC306	4822 209 30183		LC7883kM
IC307	4822 209 80401		NJM4558D
IC308	4822 209 80401		NJM4558D
IC309	4822 209 30171		µPC78M05H
IC310	4822 209 30614		µPC79M05H
IC500	4822 209 30616		M5230L
IC501	4822 209 30248		NJM78M56FA
IC502	4822 209 30615	⚠	NJM78M15FA
IC550	4822 209 30883	⚠	TA8210AL
IC602	4822 209 30613		LA3600
IC602'	4822 209 30613		LA3600
IC603	4822 209 30619		TA7291S
IC604	4822 209 30182		NJM4558L
IC701	4822 209 30182		NJM4558L
IC800	4822 209 30184		S-80727AN
IC801	4822 209 30609		µPD75212ACW-A01
IC802	4822 209 30617		µPD74HC4052C

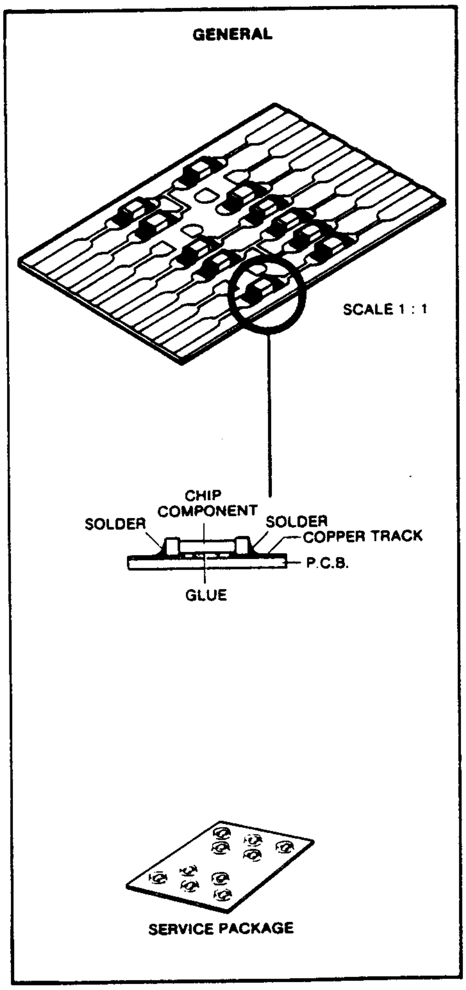
Q1	4822 130 42077	2SC2458-GR
Q2	4822 130 42077	2SC2458-GR
Q3	4822 130 42077	2SC2458-GR
Q4	4822 130 62779	2SC2785-EL
Q5	4822 130 62792	DTA143XS
Q6	4822 130 62792	DTA143XS
Q7	4822 130 62783	2SK519-H
Q8	4822 130 62779	2SC2785-EL
Q9	4822 130 42077	2SC2458-GR
Q10	4822 130 42077	2SC2458-GR
Q11	4822 130 63191	2SK193-KL
Q12	4822 130 62778	2SC380TM-O
Q13	4822 130 62779	2SC2785-EL
Q14	4822 130 62779	2SC2785-EL
Q15	4822 130 62787	DTA114YS
Q16	4822 130 62503	DTC114YS
Q17	4822 130 62761	DTC363TS
Q18	4822 130 62761	DTC363TS
Q100	4822 130 62782	DTC114ESTP
Q101	4822 130 61189	DTA114TS
Q102	4822 130 62483	2SC1740S-S
Q103	4822 130 62782	DTC114ESTP
Q104	4822 130 62782	DTC114ESTP
Q105	4822 130 62782	DTC114ESTP
Q108	4822 130 62787	DTA114YS
Q109	4822 130 62782	DTC114ESTP
Q110	4822 130 62782	DTC114ESTP
Q113	4822 130 62512	2SC4040-Q
Q115	4822 130 62512	2SC4040-Q
Q117	4822 130 62782	DTC114ESTP
Q118	4822 130 62782	DTC114ESTP
Q119	4822 130 62782	DTC114ESTP
Q120	4822 130 62782	DTC114ESTP

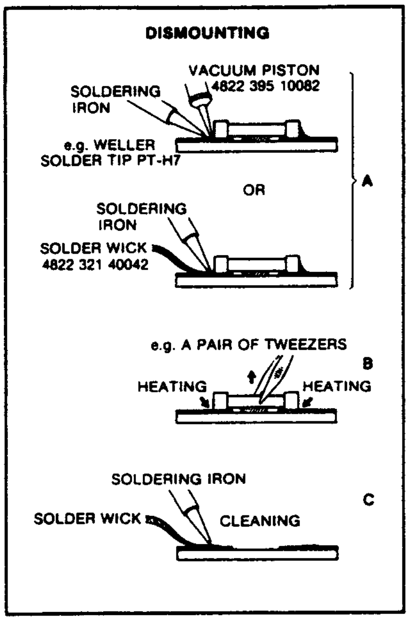
Q121	4822 130 62782	DTC114ESTP
Q122	4822 130 62782	DTC114ESTP
Q123	4822 130 41521	2SD467-C
Q124	4822 130 41521	2SD467-C
Q125	4822 130 62787	DTA114YS
Q126	4822 130 62483	2SC1740S-S
Q127	4822 130 62483	2SC1740S-S
Q128	4822 130 62782	DTC114ESTP
Q129	4822 130 62782	DTC114ESTP
Q130	4822 130 62782	DTC114ESTP
Q131	4822 130 62782	DTC114ESTP
Q132	4822 130 62483	2SC1740S-S
Q134	4822 130 42834	2SK246-GR
Q200	4822 130 62483	2SC1740S-S
Q200'	4822 130 62483	2SC1740S-S
Q201	4822 130 62761	DTC363TS
Q201'	4822 130 62761	DTC363TS
Q204	4822 130 62782	DTC114ESTP
Q204'	4822 130 62782	DTC114ESTP
Q205	4822 130 62782	DTC114ESTP
Q205'	4822 130 62782	DTC114ESTP
Q206	4822 130 62483	2SC1740S-S
Q206'	4822 130 62483	2SC1740S-S
Q207	4822 130 62784	2SJ103-Y
Q207'	4822 130 62784	2SJ103-Y
Q208	4822 130 62784	2SJ103-Y
Q208'	4822 130 62784	2SJ103-Y
Q209	4822 130 62761	DTC363TS
Q209'	4822 130 62761	DTC363TS
Q300	4822 130 62758	2SA1048-GR
Q301	4822 130 62512	2SC4040-Q
Q302	4822 130 62786	2SA1560-Q
Q303	4822 130 62512	2SC4040-Q
Q304	4822 130 62786	2SA1560-Q
Q305	4822 130 62512	2SC4040-Q
Q306	4822 130 62786	2SA1560-Q
Q307	4822 130 62512	2SC4040-Q
Q308	4822 130 62786	2SA1560-Q
Q309	4822 130 62781	DTC114TS
Q310	4822 130 62781	DTC114TS
Q311	4822 130 60766	DTA114ES
Q312	4822 130 62782	DTC114ESTP
Q400	5322 130 60898	2SC2878-B
Q400'	5322 130 60898	2SC2878-B
Q500	4822 130 62782	DTC114ESTP
Q501	4822 130 62548	2SB1185-F
Q502	4822 130 62549	2SD1762-F
Q503	4822 130 62905	2SB1243-Q
Q504	4822 130 62905	2SB1243-Q
Q505	4822 130 62782	DTC114ESTP
Q506	4822 130 61189	DTA114TS
Q507	4822 130 62781	DTC114TS
Q508	4822 130 62906	2SD1864-Q

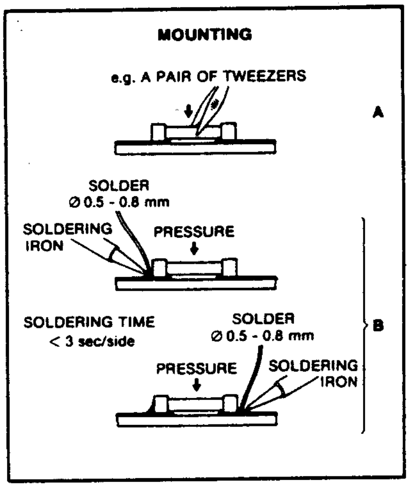
Q509	4822 130 62549	2SD1762-F
Q510	4822 130 62548	2SB1185-F
Q550	4822 130 62782	DTC114ESTP
Q551	4822 130 62906	2SD1864-Q
Q552	4822 130 62906	2SD1864-Q
Q553	4822 130 62905	2SB1243-Q
Q554	4822 130 62782	DTC114ESTP
Q604	4822 130 62782	DTC114ESTP
Q650	4822 130 62483	2SC1740S-S
Q650'	4822 130 62483	2SC1740S-S

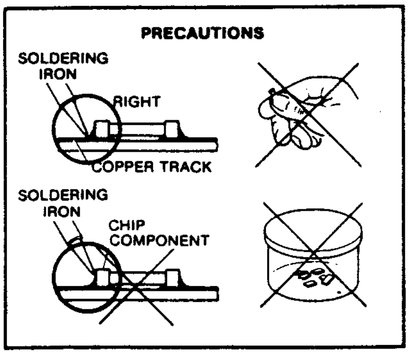
Q651	4822 130 62904	2SC2878-A
Q651'	4822 130 62904	2SC2878-A
Q800	4822 130 61189	DTA114TS
Q801	4822 130 62782	DTC114ESTP
Q802	4822 130 62781	DTC114TS
Q803	4822 130 62907	DTA113ZS
Q804	4822 130 62781	DTC114TS
QA800	4822 209 30168	DT5A114E
QA801	4822 209 30169	DT5C124E

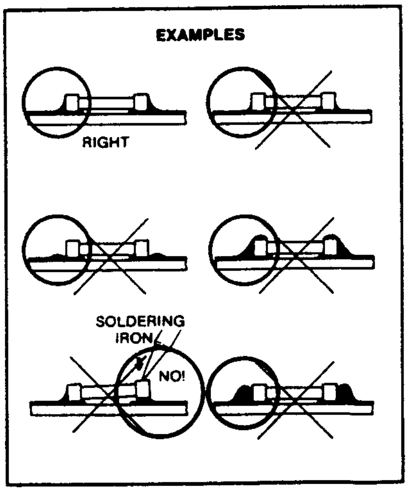
HANDLING CHIP COMPONENTS


GENERAL
SCALE 1 : 1
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING IRON
e.g. WELLER SOLDER TIP PT-H7
OR
A
SOLDERING IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
B
HEATING
HEATING
SOLDERING IRON
C
SOLDER WICK
CLEANING


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
Ø 0.5 - 0.8 mm
SOLDERING IRON
PRESSURE
SOLDERING TIME
< 3 sec/side
SOLDER
Ø 0.5 - 0.8 mm
B
PRESSURE
SOLDERING IRON


PRECAUTIONS
SOLDERING IRON
RIGHT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


EXAMPLES
RIGHT
SOLDERING IRON
NO!

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

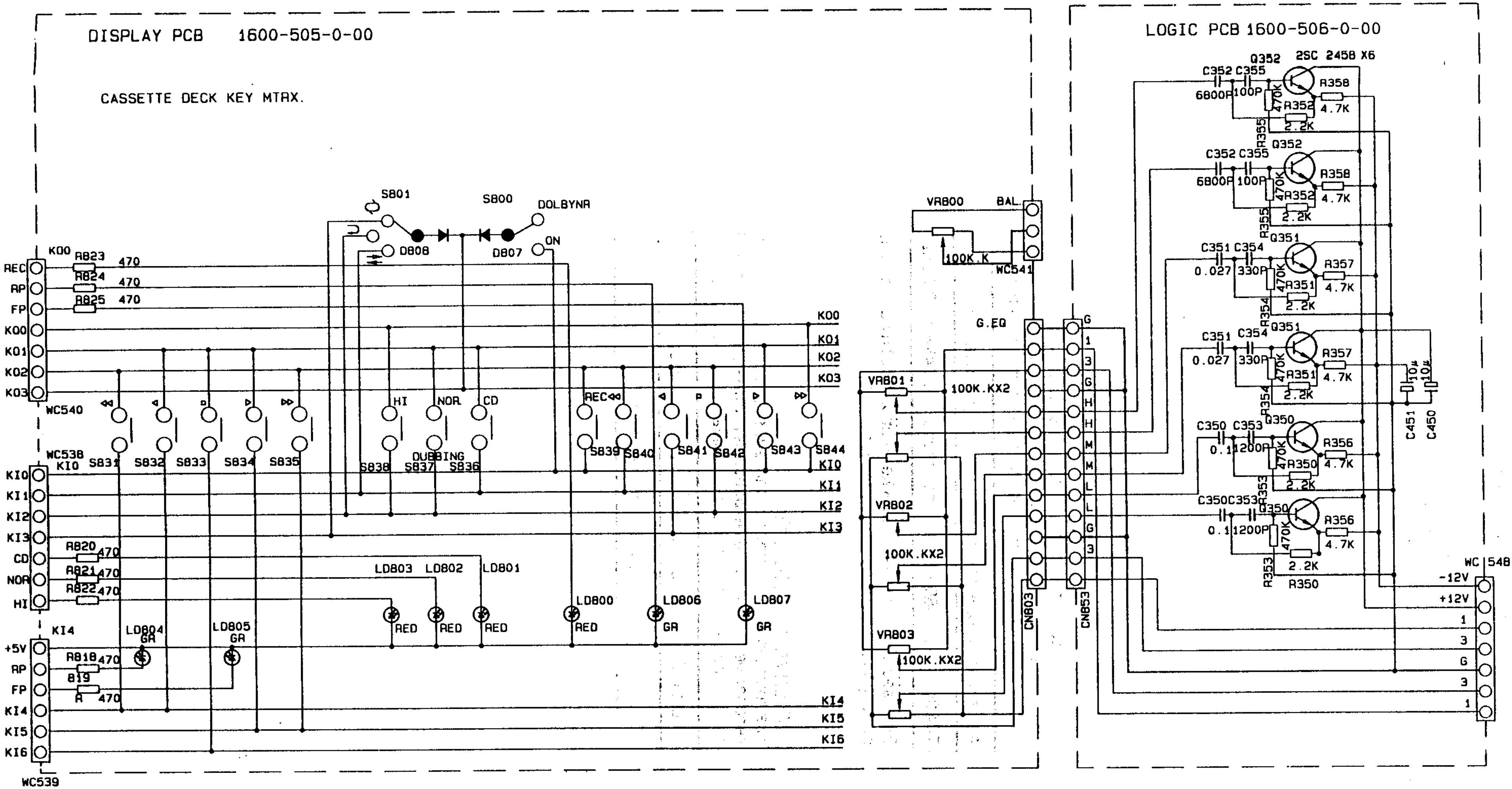
S Varning!

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varo!

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen!

CS 34 996


DISPLAY PCB 1600-505-0-00
CASSETTE DECK KEY MTRX.
LOGIC PCB 1600-506-0-00
Q352 2SC 2458 X6
C352 C355 6800P 100P 470K R352 R355 2.2K R358 4.7K
C351 C354 0.027 330P R351 R354 R357
C350 C353 0.1 1200P R350 R353 R356
Q351 Q350
C451 C450 10μ
WC 548
-12V +12V 1 3 G 3 1
CN803 CN853
G 1 3 G H H M M L L G 3
G.EQ
VR800 BAL. 100K.K WC541
VR801 VR802 VR803 100K.KX2
S801 S800 DOLBYNR ON D808 D807
REC RP FP K00 K01 K02 K03 WC540
R823 R824 R825 470
S831 S832 S833 S834 S835 S836 S837 S838 S839 S840 S841 S842 S843 S844
HI NOR CD DUBBING REC
WC538 KI0 KI1 KI2 KI3 CD NOR HI
R820 R821 R822 470
LD800 LD801 LD802 LD803 LD804 LD805 LD806 LD807
RED GR
KI4 +5V RP FP KI4 KI5 KI6 WC539
R818 819 470

Notes:

1. All resistance values are in Ω. k = 1000Ω M = 1000KΩ
2. All capacitance values are in μF. P = 10⁻⁶ μF
3. All resistors are 1/6 watt, unless otherwise specified.
4. Voltages measured from point indicator to chassis ground with VTVM at line volume control minimum and no signal.

(Specifications and circuits subject to change without notice for improvement.)

1600-497-0-00 E

Service Information

1991 - 05 - 03

FW2010, FW2014 and
FW2015 families

A92 - 140

Product Service Group CE Audio

FW2015 family
The tolerance of the clock in this set should be less than 25 seconds per month. If the set performs is worse then adjustment on the clock should be done as indicated in the table below.

Adjust with	Measure across	Adjust for
TC800	IC800 pin 42 and ground	2048Hz ± 0.02Hz

Enclosed is a the cassette deck key matrix circuit diagram the is missing in the existing Service Manual.

FW2010 and FW2014 family
The tolerance of the clock in this set should be less than 25 seconds per month. If the set performs is worse then adjustment on the clock should be done as indicated in the table below.

Adjust with	Measure across	Adjust for
TC800	IC801 pin 16 and ground	2048Hz ± 0.02Hz

Service Information

1993 - 04 - 28

FW2010 family

A93 - 612

Product Service Group CE Audio

Pos 232 is change from 4822 444 50673 to 4822 444 50712

Reason: Error in mechanical partlist

Service
Service
Service